

AMERICAN SURVIVAL GUIDE

BIO WARFARE

THE REAL AND AGONIZING THREAT REMAINS

THE SWEDISH TRIO

EKA's Best for the Bush

GET A GRIP!

Oriskany Arms 1911's Hidden Survival Kit Grips

VEHICLE READINESS

Plan the Load for Hitting the Road

FULL-THROTTLE GAS PISTON AR

Hardcore Performance and Reliability from LWRCI

GEAR



DINING OUT?

+ PREPPER'S GIFT GUIDE



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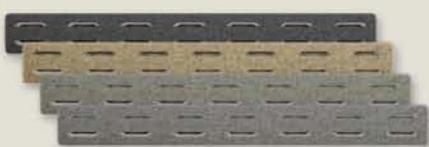
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FIRST WORDS

LIFE IS ALL ABOUT THE LITTLE THINGS

I recently walked the crowded aisles of a prepper show in Lawrenceville, Georgia. It was a typically hot and humid Saturday morning as I trudged to the end of the line to wait in the blinding sun for my turn to enter. Even though it was early, I was withering fast in the still, moist air ... that is, until some kind folks up ahead saw that the line had extended past the shade of the roof overhang and inched forward to make some room for us latecomers.

It was a little thing, but it made a big difference to those of us who could then take refuge in the cooler shadow.

Sometimes, little things are not so positive.

Virtually every disaster scenario we plan to protect ourselves from has small components at its roots. Individual raindrops and snowflakes gather and incapacitate or destroy locales or regions. One or two people's actions can quickly escalate into full-blown riots and mayhem that disrupt thousands of lives. A tiny ember can grow until its flames decimate a dry forest and hundreds of nearby homes.

But maybe the most insidious of all are the microscopic biotoxins that can be harnessed by madmen to lay waste to unsuspecting populations.

While "civilized" nations have either not participated in, or have discontinued, the use of such weapons, there remains a cadre of governments and factions that look to biowarfare as a game-changing weapon of mass destruction. With most of the probable offenders considered hostile to our way of life, we must keep this threat in mind as we implement our plans and stock our shelves.

To many, biological weapons are fearsome—even more so than chemical agents; in part, because they have the added dimension of being spread by their victims, either to unsuspecting travel and shopping companions or those who come to the aid of the afflicted. We also have more opportunities to see the effects of biotoxins, because they are often naturally occurring diseases that dominate the news from time to time. Just the mention of the word, "Ebola,"

terrifies millions of people. Because the delivery systems vary and are hard to detect, this threat is a particularly difficult one to defend against.

American Survival Guide contributor Al J. Venter has been tracking this topic for a number of years and, while it doesn't provide you with a silver bullet, his story, "Diabolical Biological Warfare," is illuminating and might inspire you to seek additional information.

Single-cell assassins aside, daily attention to your environment continues to be the primary concern. As the year draws to an end and you look toward the future, now is a good time to learn from last year's experiences, reassess your priorities and improve your plan of action.

While it's my job to make sure you think about them, the following are questions only you can answer:

Have your activities been based on good information and deliberate consideration of their effects, or have you opted for convenient solutions? Did you spend a few days in your survival shelter under the kind of conditions you're anticipating?

Your bug-out bag is filled to the brim with lots of great kit—but have you actually practiced with it? Could you find what you need in the dark? Have you gone three days with only the water packets and survival rations you packed, and in the specified servings?

Each effort is a small quiz that culminates in the big test that determines whether you'll thrive in a crisis.

As the new year launches and a new American president takes the helm, there will be more opportunities for your normal way of life to be interrupted. With that in mind, make sure you're ready. Take care of the small things.

— Mike McCourt

Editor's note: The bylines for the "Survivor Flashback" and "Urban Jungle Gear Guide" stories in our October 2016 issue were mistakenly switched. Lamar Underwood wrote the flashback story, and Michael D'Angona was the author of the gear guide.

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PRODUCTS

NEW

1

CampGuard Lantern

If fleeing from the hordes of marauders who have ransacked your town pushes you into the woods, the worry of staying safe and secure while you sleep in your tent can now be alleviated. CampGuard is a motion sensor system that produces a bright, 300-lumen LED light to surprise any camp intruder and also alert you to their presence. It has three modes: a traditional camp light that can be set to 100 or 300 lumens; auto motion detection (300 lumens); and auto motion detection with audible alarm.

Features

- Two regular output levels
- Two alarm modes (light and light/sound)
- LED lamp
- 35-foot perimeter
- Water resistant
- Powered by four D batteries

MSRP

\$79.99

URL

www.BrightPathLED.com
2

BAMFF 8.0 Tactical Flashlight

The Broad Array Multi Flood Flashlight (BAMFF) combines two CREE LEDs—one is a powerful spotlight; the other is a wide-angle flood light for a combined output of up to 800 lumens. It can be powered by an 18650 lithium-ion rechargeable battery or three AAA batteries using the included cartridge. The tail switch toggles between six modes: spot/flood, spot only, flood high, flood low, SOS and strobe. The aluminum body is impact resistant up to 1 meter and is IPX6 waterproof.

Features

- Spot and flood: 800; 1 hour, 45 minutes
- Spot: 700, 2 hours
- Flood High, 350, 4 hours, Flood Low, 120, 11 hours
- SOS, 700, 6 hours
- Strobe, 700, 6 hours
- Beam distance: 170 meters

MSRP

\$79.99

URL

www.Striker1.com
3

Kershaw Fatback Folder

The durable Kershaw Fatback gets its name—not from its relatively slim handle, but from the extra built-in grip texturing on its glass-filled nylon handle. The blade is made from 8Cr13MoV steel in a modified drop-point fashion with a dagger shape. The black-oxide coating provides some additional protection and won't reflect light while being used.

Features

- SpeedSafe assisted opening
- Liner lock
- Four-position, deep-carry pocket clip
- Overall length: 7.75 inches
- Blade length: 3.5 inches
- Closed length: 4.25 inches
- Weight: 3.6 ounces

MSRP

\$39.99

URL

www.Kershaw.KaiUSALtd.com
5

Rockagator RG-25 Backpack

The new generation of the Rockagator RG-25 backpack includes new colors and features. Not only is it 100 percent "quick-submersion" waterproof, it will float when dropped in the water (when properly sealed).

It features an adjustable shock cord gear lattice, an easy-to-carry external handle and side net pockets that quickly drain. The lumbar support and shoulder straps are padded. The pack features additional reflective surfaces and screen prints on the front and back so you'll have no problems being spotted in an emergency.

Features

- 40-liter capacity
- Water-resistant front pouch
- Internal zipper pouch
- Reflective patches on shoulder straps
- Reflective print on back of pack
- 44-pound (20 kg) strap strength

MSRP

\$109.99

URL

www.Rockagator.com
**4**

Mishmi Takin Kameng Hiker

Named for the rugged West Kameng district in India, this boot is designed for long-distance hiking in hot and wet conditions over mixed terrain. The medium cut provides maximum ankle support, and its 100 percent waterproof eVent membrane vents heat and sweat out, keeping the foot cool and dry. The Vibram Megagrip rubber sole has a large contact patch for high traction on wet surfaces. It has an abrasion-resistant heel cap and a rubber toe rand for protection on the trail. The upper portions are constructed with suede and Cordura, while the interior is padded with OrthoLite impact-absorbing material.

Features

- Vibram Megagrip rubber outsole for traction on wet surfaces
- High-profile cupsole for foot protection on unstable ground
- Abrasion-resistant heel cap and rubber toe rand

MSRP

\$79.99

URL

www.Striker1.com
6

SureFire Maximus Headlamp

This rechargeable LED headlamp can be adjusted to deliver between 1 and 500 lumens of light—or any level in between. It features a large dial to adjust the output with one hand, and one hand can also aim the light up and down 90 degrees.

Its rechargeable lithium-ion battery can be charged via both wall-type AC outlets and 12-volt DC plugs (included). A long-running SOS beacon provides an extra margin of safety. This headlamp is built from tough, lightweight magnesium.

Features

- One-hand output adjustment from 1 to 500 lumens
- Wide beam of light
- Head rotates up and down 90 degrees
- Built-in SOS beacon
- IPX4 water-resistant

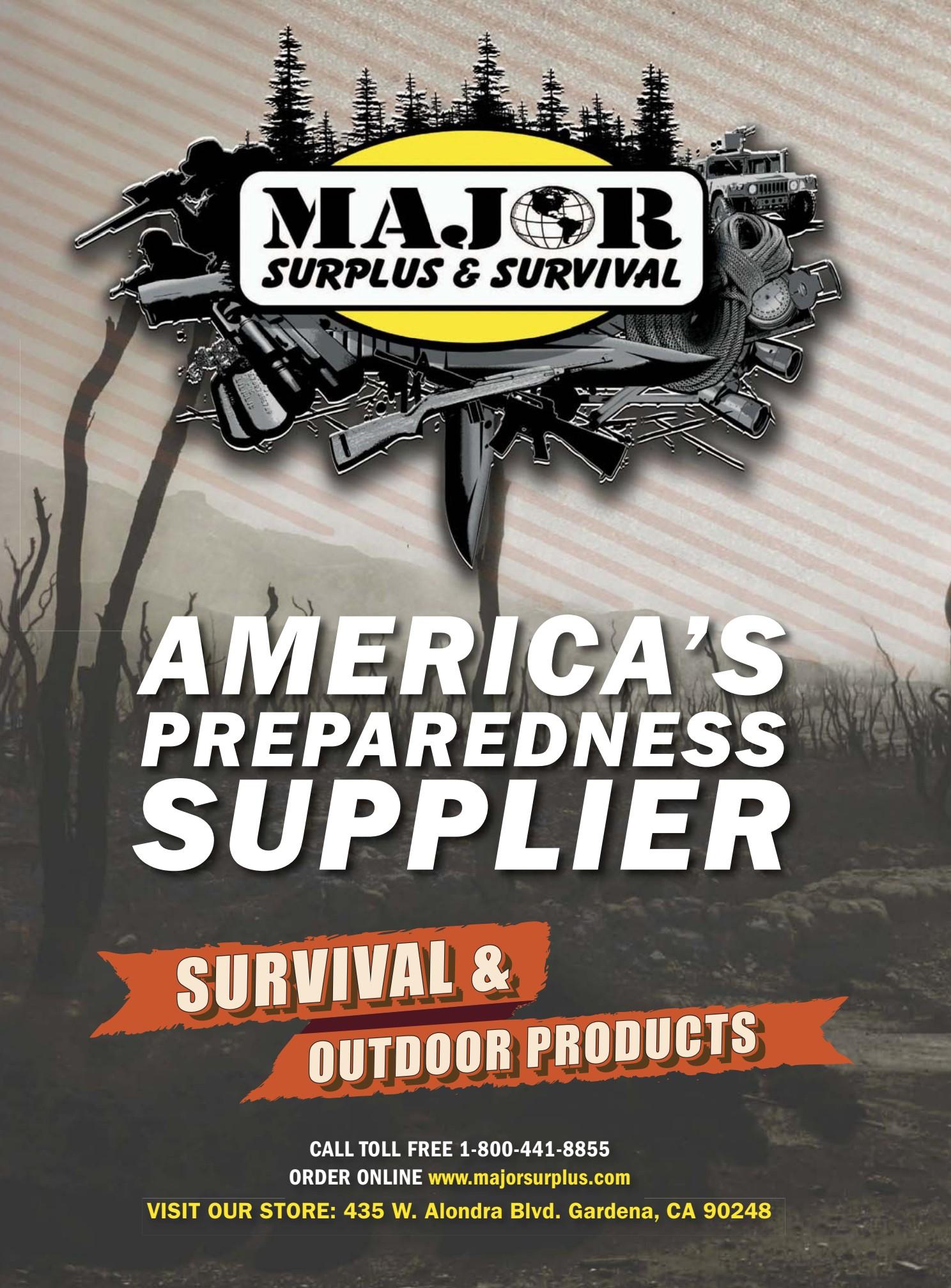
MSRP

\$275

URL

www.SureFire.com

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PRODUCTS

NEW

7

SIG Sauer/ZULU7 10x42mm HDX

If you not only need to see what's beyond the next ridge but also want to count the blades of grass on top of it, this multicoated roof prism, lightweight binocular is what you need. The ZULU7 is packed full of the latest optical technology, including SIG Sauer's industry-leading HDX optical design, which combines extra-low dispersion glass with high-light-transmittance glass to provide you with the maximum in color, image brightness and absolute clarity. It is waterproof to 1 meter and coated with durable rubber armor for protection while also providing a nonslip grip—with or without gloves on.

Features

- Field of view: 341 feet @ 1,000 yards
- Eye relief: 17mm
- Length: 5.8 inches
- Weight: 33 ounces

MSRP

\$839

URL

www.SIGOptics.com

8

Hattrick 9.7 Dynamic Climbing Rope

You don't have to be a mountain climber to understand the value of having a strong and versatile rope in your pack.

The four-layer structure of the Hattrick 9.7 offers a high level of safety and excellent wear resistance. The rope is suitable for both beginners and experienced climbers and is UIAA rated for five falls.

Features

- No sheath slippage
- Length: 60 meters; diameter: 9.7mm
- 8.4 kN of maximum impact force
- Dynamic elongation: 29 percent
- Weight: 61 grams (2.15 ounces) per meter
- Colors: green/blue, red/blue

MSRP

\$130.95

URL

www.MyTendon.com

9

Waterproof Drawstring Backpack

Protecting your sensitive gear or clean clothes from the elements is paramount in a survival situation. There's no point in carrying gear if it runs the risk of being damaged by rain, sand, dirt, water or snow. The pack's easy-to-adjust cords fit nearly any body type, and the pack includes a sternum clip to keep the straps on your shoulders. To make it watertight, align the top two edges, roll down tightly at least three times and click the buckle closed.

Features

- Durable 1/4-inch cords
- Sternum clip
- Interior 8x7-inch zippered pocket
- Dimensions: 20x13.25x0.75 inches

MSRP

\$19.99

URL

www.GeckoBrands.com

11

Castaway Travel Hammock

Offered in a multitude of colors, the Castaway Travel Hammock is made from a durable, breathable and quick-drying nylon fabric. Backpack friendly, it tips the scales at only 2 pounds, 8 ounces.

The hammock comes with two nylon hanging straps, each 10 feet long, with professional-grade aluminum hardware to ensure a safe and secure attachment. Everything folds away and fits into the included storage pouch, which then doubles as a pocket to store anything while you're in the hammock.

Features

- Bed length: 105 inches
- Width: 81 inches
- Weight limit: 400 pounds
- Holds two people
- Includes two 10-foot tree straps
- Nylon fabric construction
- Weight: 2 pounds, 8 ounces
- Includes storage bag

MSRP:

\$39.99

URL

www.CastawayTravelHammocks.com

10

QuickFire Fire Starter Sachets

QuickFire is the first fully waterproof fire starter and, according to the company, it can even float on water while on fire. It can be easily lit in rain, snow or high winds, providing a safe, clean and environmentally friendly way to start a fire. It burns at nearly 1,000 degrees (F) and has countless outdoor applications—from cooking and signaling to boiling water and starting a barbecue. It has a light time of one to three seconds, similar to lighting a candle.

Features

- 100 percent waterproof
- Made from N-paraffin oil
- One- to three-second light time
- 10-minute burn time
- 12-inch flame height
- Includes 60 sachets

MSRP

\$19.99

URL

www.QuickFireStarters.com

12

Nite Ize/ Financial Tool

The Financial Tool is a multitool that is thin enough to fit in your wallet—or even become your wallet. Constructed of stainless steel, this multipurpose tool has provisions for 1/4-inch, 5/16-inch and 3/8-inch wrenches; flathead and Phillips screwdrivers; a bottle opener; standard and metric rulers; tape cutter; scraper; and a wallet, thanks to its innovative "cash wrap" straps that securely hold your cash and cards. Available in stainless-steel or black finishes.

Features

- 7-in-1 multi-tool
- Travel and airport friendly
- Weight: 1.16 ounce (33g)

MSRP

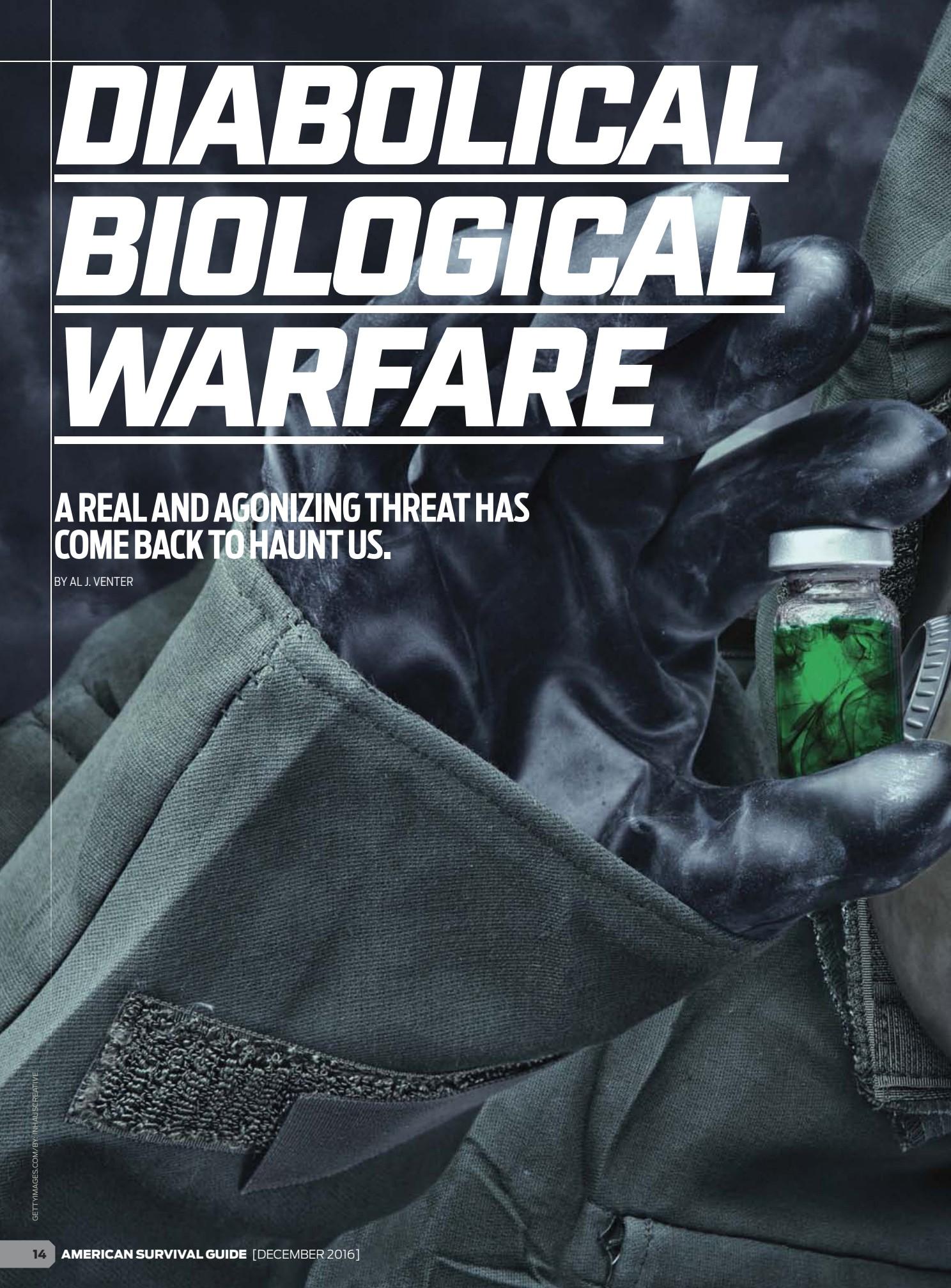
\$10

URL

www.NiteIze.com



DIABOLICAL BIOLOGICAL WARFARE

A dark, moody photograph showing a close-up of a person's hands wearing black nitrile gloves. One hand is gripping a small, clear glass vial with a metal cap. The vial contains a bright green, thick liquid that appears to be bubbling or reacting. The background is dark and textured, suggesting a fabric or cloth material.

**A REAL AND AGONIZING THREAT HAS
COME BACK TO HAUNT US.**

BY AL J. VENTER



"It is an agonizing way to die. First there is fever and dreadful aching pains. Then come pus-filled boils which appear all over the body and scabs develop. Slowly, inexorably, the immune system surrenders ..."

—“Smallpox: The New Bioweapon,”
The Times, London, January 8, 2001

It is a reality of the age we live in that new (and quite a few old) weapons of war have come back to haunt us. There have been any number of films and TV programs made over the decades in which disease and germs—“biological warfare,” in modern parlance—has been a consistent theme.

These days, we take it all for granted: The denouement invariably ends well, and everybody (or almost everybody) emerges alive and well.

SMALLPOX

However, with smallpox, the reality of this invidious threat is terrifying, because the disease remains a threat. A slew of international agreements have been signed by just about every country on earth acknowledging that biological warfare is illegal, but its presence lingers.

Take one example: Smallpox, which was eradicated worldwide almost two generations



GETTYIMAGES.COM/BY: ANDREAS REH

◀ Below: A scanning electron micrograph depicts a mass of *Yersinia pestis* bacteria (the cause of bubonic plague).

ago, remains a real and identifiable threat—so much so that U.S. Special Forces were inoculated against the disease prior to going into Iraq in 2003.

The late Dr. Jonathan Tucker, an international and much respected authority on biowarfare (as well as a good friend of mine and with whom I shared many notes), cited an accident in 1978, a year after smallpox was supposed to have been eradicated worldwide: A smallpox virus escaped from a research laboratory at the University of Birmingham Medical School in Britain.

A medical photographer working on the floor above the laboratory became infected (through air vents, it was thought at the time), and she later died. The disease also spread to her mother, who survived. It was pure luck that a major smallpox outbreak did not result.

More to the point, could terrorist groups use smallpox as a weapon? Because the virus no longer exists in nature, the only way dissidents could acquire seed cultures would be on the international black market. For this reason, smallpox would be an unlikely weapon for “ordinary” terrorist groups, which would not exclude al-Qaeda.

The odds are certainly that state-sponsored operatives might obtain it—terrorists linked to rogue states such as North Korea and possibly Iran.

What is of concern is that should a group intent on causing injury or disease on a continent-wide basis manage to acquire and produce the virus in liquid form, it would be a relatively easy matter to disseminate it. A compact aerosol device in an enclosed space, such as the London Underground or the New York City subway system, would be an ideal terror scenario.

The pattern of infection is chilling. Within two weeks, the first victims would come down with fever, aches and other nonspecific symptoms before developing smallpox’s distinctive pustular rash. By the time the first patients were diagnosed, they would have infected the next wave of cases. So, it would go on

BUBONIC PLAGUE

Smallpox apart, there are several diseases brought onto American soil by the flood of illegals who entered the country in the past four or five years. Bubonic plague is only one of them. Its symptoms include fever, chills, headache and swollen lymph glands.

Another is the biological agent, *Botulinum* toxin, which is made from spore-forming bacteria found all over the world in the soil. According to Allied intelligence reports during the Second World War, the highly toxic nature of this substance was recognized by the Nazi regime, and it was feared that the Germans might develop a mechanism that could unleash *Botulinum* on the Allied forces landing on the beaches on D-Day.

***Yersinia pestis* bacteria**

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Several other diseases recently reported by Atlanta's Centers for Disease Control (CDC) to be near eradication are making a comeback in the United States.

A Health.com report disclosed in recent months that a 16-year-old girl from Oregon was sickened and hospitalized with plague after apparently being bitten by a flea on a hunting trip. This would not be of too much concern, except that the disease actually persists in parts of Africa, Asia and South America, and there have been 16 reported cases of plague, with four deaths, in the United States this past year.

OTHER "COMEBACK" DISEASES

Other "comeback" diseases that have recently entered our system—some of which are prevalent among foreign-born residents of the United States and foreign visitors—also need to be countered. These include zika, flesh-eating parasites (*coetaneous Leishmaniasis*), Ebola, leprosy, intestinal parasites, HIV, scabies and diphtheria.

In the United States, there have been two serious outbreaks of mass illness as a result of infected dairy produce: In 1985, 170,000 people were infected by the contamination of pasteurized milk by the virus, *S. typhimurium*, while in 1994, contaminated liquid ice cream transported as a pre-mix in tanker trucks affected 224,000 people in 41 states.

"A SLEW OF INTERNATIONAL AGREEMENTS HAVE BEEN SIGNED BY JUST ABOUT EVERY COUNTRY ON EARTH ACKNOWLEDGING THAT BIOLOGICAL WARFARE IS ILLEGAL, BUT ITS PRESENCE LINGERS."



▲ Above: Two healthcare workers in hazmat gear



◀ Left: The CDC Global Communications Center, Roybal Campus, in Atlanta, Georgia

In the same vein, Shanghai's enthusiasm for the consumption of clams unintentionally led to the spread of hepatitis A in 1991, with nearly 300,000 people affected. Even the recent *E. coli* scandal pales beside the food poisoning tragedy in Spain in 1981, when 800 people died and 20,000 became ill (many of them permanently) from a chemical agent that had been added to cooking oil.

Political dissidents have also had a hand in spreading disease, and the idea of making large numbers of innocent people sick by contaminating water has long been a fantasy of terror groups—from the radical Weathermen in 1960s America to the Red Army Faction in 1970s Germany, where 13 members of the extremist outfit were reported to have received instruction regarding how to poison urban water supplies in at least 20 European cities.

The obvious danger from this source was also highlighted in the United States with several unintentional incidents of mass water poisoning, as in Milwaukee in 1993, when the spread of the pathogen, *Cryptosporidium*, led to the deaths of 111 people and the illness of another 400,000.

Events of recent times have underscored the risks we face in our increasingly sophisticated, complex and overcrowded world.

As the former leader of Iran, Rasfanjani, once said of the threat to the West, "It is not necessary to develop nuclear weapons when much cheaper and more portable chemical or biological agents can kill the enemy in their thousands." According to some experts, it is not a matter of *if*, but rather of *when*, we will witness a major biological terror attack.

EBOLA

Much more serious is the role played by nations that oppose us—North Korea and the Former Soviet Union, in particular.

Both countries can be implicated in apparently trying to acquire stockpiles of the most terrible infection of them all, the notorious Ebola hemorrhagic virus. The victims of this brutal disease die a horrible death, with blood pouring from every orifice. Even the pores on the fingers bleed.

There is evidence that the Russians conducted experiments using Ebola virus. Indeed, one Soviet scientist is reported to have been observed in a Moscow laboratory with appalling symptoms of blood emitting from his body, including the pores in his fingers.

► This color-enhanced scanning electron micrograph shows splenic tissue from a monkey with inhalational anthrax.



Anthrax

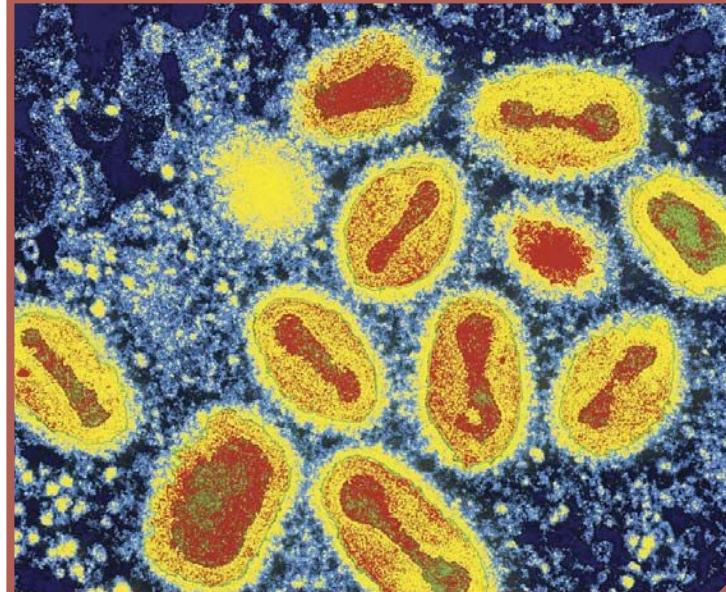
"YOU CANNOT SEE A BIOWEAPON, YOU CANNOT SMELL IT, YOU CANNOT TASTE IT."

The Russians are said to have acquired their samples of Ebola by visiting plague-infected areas of the remote parts of the Congo in Africa—a practice that the late Dr. Margaret Isaacson said was also followed by the North Koreans.

An advisor to the World Health Organization based in Johannesburg, South Africa, Isaacson was often first on the scene during outbreaks of a hemorrhagic virus such as

Smallpox virus

► Smallpox virus magnified 28,000 times (Photo: Science Photo Library, London)



Ebola. She could sometimes be spotted in the background in CNN reports on these catastrophes. She also told me about an event that disturbed her.

On one visit to an extremely remote part of the Congo that had been afflicted, she came across groups of North Koreans posing as tourists, but they were almost too interested in the infected corpses. Another source indicated that they had surreptitiously taken blood samples.

Isaacson approached the group leader, who responded aggressively, "We are tourists; why do you want to know?"

The disturbing aspect of Ebola is that just like smallpox, it can be transported and ultimately spread around in a container no bigger than a jam jar. As Isaacson suggested, should a group such as al-Qaeda, ISIS or the North Koreans manage to acquire and produce the virus in liquid form, it would be a relatively easy matter to disseminate it.

Ebola virus



▲ Above: Ultrastructural morphology displayed by an Ebola virus

◀ Left: A Liberian health worker speaks with families in a classroom used as an Ebola isolation ward on August 15, 2014, in Monrovia, Liberia. People suspected of contracting the Ebola virus are being brought to the center (a closed primary school originally built by USAID) while larger facilities are being constructed to house the surging number of patients. The Ebola epidemic in West Africa spread to more than 28,000 people between March 25, 2014, and February 14, 2016.



◀ Left: A Doctors without Borders (MSF) health worker in protective clothing carries a child suspected of having Ebola in the MSF treatment center on October 5, 2014, in Paynesville, Liberia.

HOW BIOWEAPONS WORK

One needs to understand how these diseases actually work when entering the body.

There are two basic types of biological weapons: Those that are contagious and those that are not. Anthrax, for instance, is not contagious; people don't spread it among themselves. Also, you cannot catch anthrax from someone who is dying of it.

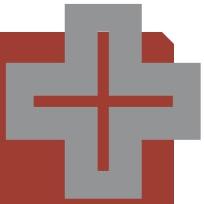
In contrast, smallpox and Ebola are virulently contagious. They spread rapidly, magnifying themselves, causing mortality and chaos on a massive scale.

One source described the most powerful bioweapons as dry powders formed of tiny particles ("bio-dusts") that are almost designed to lodge in the human lung.

Per the 1998 *Congressional Record*, "The particles are amber or pink. They have a strong tendency to fly apart from one another, so that if you throw them in the air they disperse, invisible to the human eye, normally within seconds after the release.

"You cannot see a bioweapon, you cannot smell it, you cannot taste it. You don't know it was there until days later, as with anthrax, when you start to cough and bleed. By that time you may be spreading it around. The particles of a bioweapon are exceedingly small, about one to five microns in diameter. You could imagine the size this way: around 50 to 100 particles lined up in a row would span the thickness of a human [h]air.

AMERICA'S FIRST BIOLOGICAL ATTACK



We saw something of this potential in the quiet American town of Dalles, which nestles along the Columbia River in Oregon. It was as if a terrible Biblical plague had been visited on the community.

In September 1984, hundreds of residents were suddenly struck down by violent sickness, made all the more terrifying because of the speed at which it raced through the area. First, the victims felt nausea and stomach cramps. Soon afterward, they were gripped by dizziness and disorientation. Then came fever, the chills, extreme vomiting and diarrhea, forcing many of them to be hospitalized.

No age group was safe, with the afflicted ranging from infants to elderly women. As the casualties mounted, bewilderment and panic resulted.

At first, investigators concluded the apparent mass poisoning was the result of poor personal hygiene by food handlers working in local restaurants and bars. But most believed this to be an

inadequate explanation; it could not account for either the virulence or the scale.

They were right to be suspicious. On further investigation (by then, federal law enforcement agencies and the CDC had been brought in), it emerged that there were far more sinister origins.

The reality was that the town had been subjected to North America's first bio-terrorist attack. The residents had been deliberately poisoned with a salmonella virus by power-crazed members of an extreme religious cult.

In a bizarre political plot that would have been laughable—had it not been so harmful—the fanatics (all followers of the Asian mystic, the Bhagwan Shree Rajneesh) wanted to incapacitate the local electorate so they could seize control of the Dalles municipal council and promote the expansion of the commune they had set up nearby.

It was the cult's chosen method of attack. In

a series of experiments to test the effectiveness of their pathogens, they first put salmonella in the drinking glasses of two municipal officers, one of whom became seriously ill.

Then, they stepped up their operations, contaminating 10 salad bars in local restaurants with salmonella. They did this either by smearing the virus directly onto the produce or by placing it in the salad dressing.

Eventually, 751 people were infected, with 45 of them hospitalized. The truth about the conspiracy came out partly because of splits in the cult, some of whose members gave evidence to the police.

It is a sign of how much more innocent the world used to be about terrorism that the conspirators, led by a zealot called Sheela Silverman, only received light sentences and were out of prison in four years. At the time, there was no such crime as "bio-terrorism" with which they could be charged, so they had to be convicted on far lesser offences.



► Above: High-tech, high-security labs—the Integrated Research Facility at Fort Detrick, Maryland

"The tiny size of a weaponized bio-particle allows it to be sucked into the deepest recesses of the lung, where it sticks to the membrane, and enters the bloodstream. Then it begins to replicate. A bioweapon can kill you with just one particle in the lung. If the weapon is contagious in human-to-human transmission, you will kill a lot of other people too."

"Given the right weather conditions, a bioweapon will drift in the air for up to a hundred miles. A couple of hundred pounds of anthrax spores in optimal atmospheric conditions could kill up to three million people in any of the densely populated metropolitan areas of the United States."



◀ Left: Protective equipment used to treat Ebola patients



◀ Below: Biohazard space suits are used in restricted areas.

ANTHRAX

Which brings us to anthrax—potentially the most insidious biological threat of all. The World Health Organization has estimated that 100 pounds of dry anthrax used against a city would kill as many as 36,000 people and possibly incapacitate another 50,000.

A demonstration of the deadly reality of such viruses occurred in the Soviet Union in the 1980s. In an incident hushed up because of its enormous scope for international embarrassment, a container full of bacterial spores broke at an army research laboratory in Ekaterinburg in Russia, releasing the pathogens into the atmosphere through air conditioning ducts.

The spread lasted only 10 minutes before the electricity was switched off at the plant, but according to Harvard professor Matthew Meselson, this brief period was enough to cause more than 100 civilian deaths and, it was whispered, many more military fatalities.

Moscow has never commented on either the cause of the disaster or the casualties. **ASG**

"ACCORDING TO SOME EXPERTS, IT IS NOT A MATTER OF IF, BUT RATHER OF WHEN, WE WITNESS A MAJOR BIOLOGICAL TERROR ATTACK."

Researching these microscopic, but deadly, threats requires the highest levels of care and protection, because even the slightest error can have a fatal outcome.



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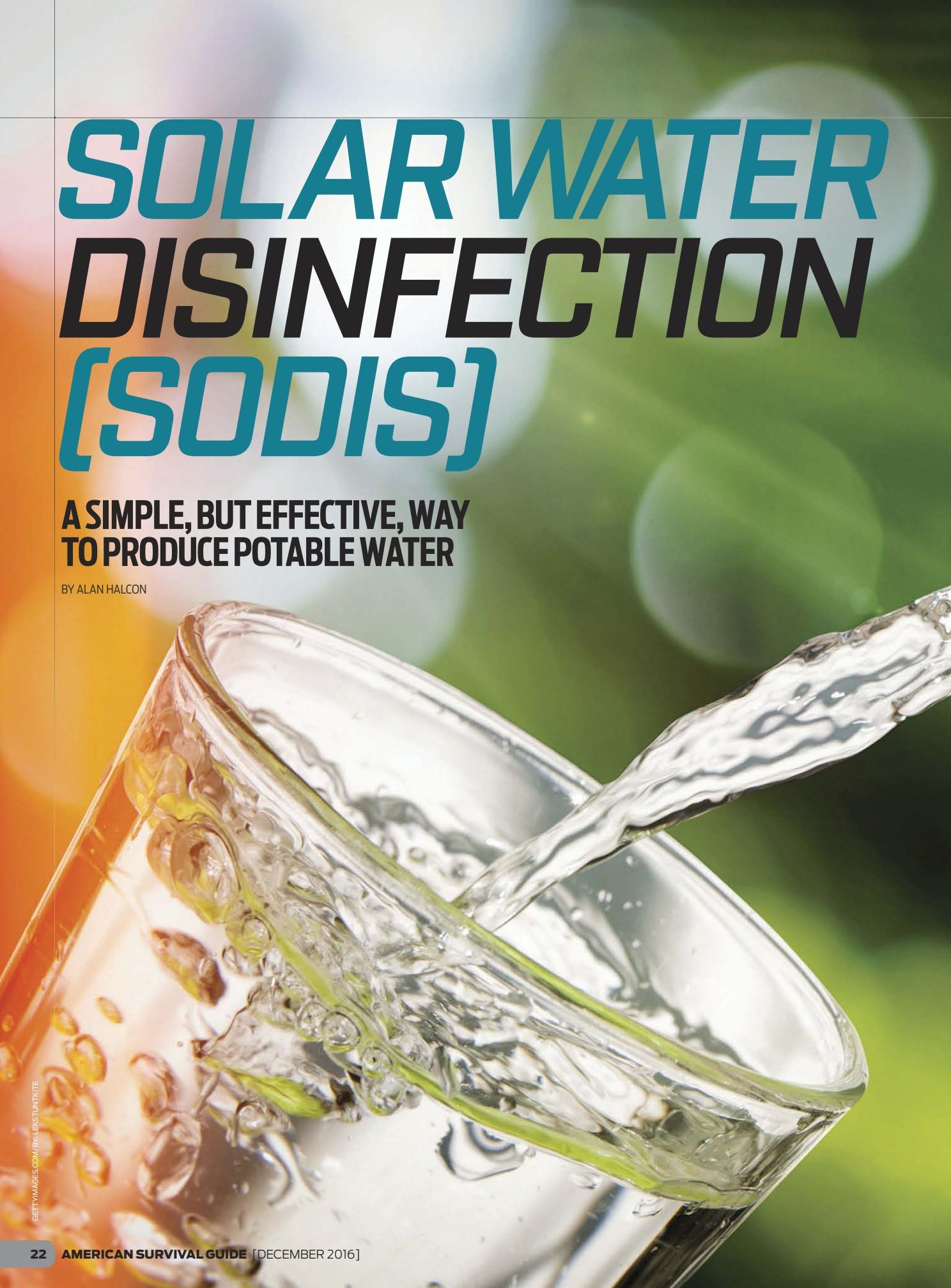
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THE SURVIVAL MEDICINE Handbook

**Joseph Alton MD
Amy Alton ARNP**

THE essential guide for when medical help is NOT on the way

SOLAR WATER DISINFECTION **(SODIS)**



A SIMPLE, BUT EFFECTIVE, WAY
TO PRODUCE POTABLE WATER

BY ALAN HALCON



◀ SODIS is an effective and sustainable low-cost and low-tech method of overcoming potable water outages.

spend a considerable amount of time in Mexico. Going back into certain rural areas can really make one feel as if they've fallen away from civilization. Housing is deplorable, lifestyle is poor, and drinking tap water is not recommended. At every turn, one is constantly reminded of how good we have it here, in the United States.

In those parts of Mexico and in other parts of the world with similar living standards, clean drinking water is certainly a welcome treasure. Viruses, bacteria and protozoa are ready to wreak havoc on the unsuspecting. Even the simple acts of washing your hands, brushing your teeth and rinsing your vegetables present a risk of contracting a bad bout of "Montezuma's revenge." Sadly, for those living in those areas, it is just a normal way of living and something they just accept as a part of life.

However, with very little effort, easily found plastic bottles and a little science know-how, people can live a much



◀ Below: A young girl fetches murky water from a hole dug near a dried well in Jamam, south Sudan, where chronic water shortages for some 35,000 refugees have sparked an increase in diarrhea.

healthier and happier life free of dysentery and other intestinal illnesses. These illnesses, if not prevented, can severely limit one's ability to survive.

STUFF IN THE WATER

In most of the United States today, good drinking water is generally taken for granted. But in much of the developing world, safe drinking water cannot be assumed.

Although there are many things in the water around the world that can get us sick, the three major health risks to humans found in water are from protozoa,



GETTY IMAGES.COM/BY:AFP



◀ Left: A young child and local residents stand by buckets of dirty water in Suining, Sichuan Province, China.

“USING PLASTIC WATER BOTTLES FOR WATER DISINFECTION IS A VERY LOW-TECH, LOW-COST METHOD THAT CAN BE USED WHEREVER AND WHENEVER THE NEED ARISES.”

viruses and pathogens. Each one of those categories of water-borne organisms presents a unique health hazard.

Of these, Giardia and Cryptosporidium are the most common; both of them pose serious health risks. An infection with these protozoans may cause chronic digestion problems that can lead to malnutrition. Both pathogens have a cystic stage, which makes them resistant to environmental influences, allowing them to survive for long periods of time outside any host.

FIRE IS BEST BUT NOT ALWAYS POSSIBLE

In the United States, most campers assume that water should be boiled for 10 minutes before drinking it, just to be safe. In some countries, however, the ability to boil water has proven to be a major obstacle, in large part because of a lack of firewood.

Research shows that all pathogens in the water are dead when the water reaches around 170 degrees F (or about 75 degrees C). So, in fact, simply bringing the water to a boil is sufficient.

But what if you simply can't, or don't, deem it wise to make a fire to purify your water? Is there an alternative?

According to various international agencies, such as EAWAG (Swiss Federal Institute of Environmental Science and Technology) and SANDEC (Department of Water Sanitation in Developing Countries),

➤ Right, top: Heating water is a sure way of killing water-borne viruses and pathogens, but it's not always possible.

➤ Right, bottom: While boiling a pot of water for 10 minutes is now believed to be overkill, even the process of heating water to 170 degrees F can be a strain on scarce firewood resources.



clear plastic water bottles can serve a valuable role in disinfecting water.

SODIS

This method is referred to as SODIS, for "solar water disinfection." On the surface, it seems too simple a solution to be effective.

Exactly how does it work?

The effectiveness of SODIS takes advantage of the sun's UV rays and the process of pasteurization. Here are the steps to follow:

1 Select a clear PET (polyethylene terephthalate) plastic bottle, free of scratches and dirt. These are relatively common and available worldwide, because they are used for packaging carbonated beverages, water and many food products.

2 Fill the bottle three-quarters of the way with clear water; shake to aerate. (If the collected water is cloudy or contains suspended debris, it should first be allowed to settle in another container such as a bucket. Then, the water should be strained through a cloth before being poured into the plastic bottle.)

3 Fill the bottle the rest of the way, and secure the cap tightly.

4 Expose the subject water to the sun by laying the bottle on its side, either on a roof or somewhere where shadows will not hit it. The ideal location is on a corrugated metal roof.

5 Wait about six hours during full sunlight before you drink the water.

LIMITATIONS OF SODIS

Although it is very effective, SODIS is not free of limitations. For one, adequate sunlight is necessary.

During the winter, when the sun is lower in the sky, the days are shorter and air is cooler. As a result, SODIS will take longer to work than during the summer. Cloud cover also means you'll have to keep the bottle in the sun longer than the recommended six hours. Locations between 35 degrees north latitude and 35 degrees south latitude are ideal for the use of SODIS. The sun is visible for 14.5 hours during the summer solstice and 9.75 hours during the winter solstice. (For reference, the southern border of Tennessee runs along the 35th parallel.)

HOW LONG IN THE SUN?

6 Six hours if the sky is no more than 50 percent cloudy.

7 Two consecutive days if the sky is more than 50 percent cloudy.



➤ *Above:* SODIS takes advantage of existing reusable clear plastic bottles and requires no additional resources.

"...[SODIS] IS A GOOD METHOD IF YOU DO NOT HAVE THE OPTION OF BUILDING A FIRE WHEN YOU WANT TO PURIFY WATER."

➤ *Right, top:* The ideal bottle to use for SODIS is free of dirt and scratches to ensure efficiency of the process. Be sure to tighten the cap before laying the bottle on the surface you're using.



➤ *Right, bottom:* Safe water production is limited only by the amount of sun and the number of bottles you have access to.

“... THE THREE MAJOR HEALTH RISKS TO HUMANS FOUND IN WATER ARE FROM PROTOZOA, VIRUSES AND PATHOGENS.”

- ◀ One hour at a water temperature of at least 122 degrees F.
- ◀ During days of continuous rainfall, SODIS does not perform satisfactorily. Rain-water harvesting or boiling is recommended during these days.

Cloudy water and water with suspended organic matter—leaves, twigs, etc.—affect the ability of the sun's UV rays from penetrating the water, so you need to pre-filter the water. If it's really not possible to do this, you will need to heat that water by more conventional means, such as a fire.

Remember: Be sure you use clean bottles that are free of dirt and scratches. Scratched or dirty bottles inhibit the effectiveness of SODIS. For the same reason, *only use clear plastic bottles*, not colored bottles.

Standing bottles up does not work well. For maximum effectiveness, lay the bottles on their sides. You don't want water deeper than 4 inches (10 centimeters) for ideal UV penetration.

It is important to note that SODIS does not produce sterile water. Organisms other than human pathogens, such as algae, are well adapted to the environmental conditions in the SODIS bottle and might even grow there. However, algae do not pose a danger to human health.

SODIS ADVANTAGES

Obviously, this is a good method if you do not have the option of building a fire when you want to purify water. In addition, you can process many gallons of water at a time, provided you have enough bottles to do so.

By not using fire, you're not drawing attention to your location, which could be critically important. You won't need to expend the energy of searching for dry tinder and firewood. Using SODIS is really easy, and anyone can be involved. Using plastic water bottles for water disinfection is a very low-tech, low-cost method that can be used wherever and whenever the need arises. **ASG**



◀ Far left, top: A small group of Giardia trophozoites—the second stage of life for these nasty parasites

◀ Far left, bottom: Cryptosporidium can be found throughout the United States. It was the leading cause of waterborne disease outbreaks connected to recreational water from 2001 through 2010.

◀ Near left: When public water systems go down or your well is corrupted by floods or seismic events, this could be your only source of water.

IDENTIFYING “PET” CONTAINERS

There are numerous types of plastics used in general product and food and beverage packaging. Plastic formulations for specific products are chosen based on the product, appearance, strength and other packaging and marketing needs.

PET (polyethylene terephthalate) is one of a number of food-grade plastics, and it is recyclable. You see products packaged in this type of plastic every day. In fact, you probably even have some in your refrigerator, pantry or bug-out bag right now.

In 1988, as recycling was becoming more popular and sophisticated, the Resin Identification Code (RIC) system was introduced so that specific plastics could be identified and sorted for the recycling process.

In 2008, ASTM International assumed oversight of the RIC system and later issued ASTM D7611-Standard Practice for Coding Plastic Manufactured Articles for Resin Identification. The standard was updated to change the RIC symbol to the solid triangle we see today. You can identify a PET container when you find the numeral “1” inside the triangular recycling symbol. This way, you can be sure you're using the right type of bottle for your SODIS efforts.



GETTY IMAGES.COM/BY/NINO MASCARO

don't like to be caught unprepared, especially when I'm wandering in the woods. At a minimum, I normally carry a knife, a lighter and ferro rod for fire, a compass and a water bottle nested in a metal cup (the cup allows me to boil water and cook).

Another thing I always carry—and it's something that's often ignored by many survival manuals—is a firearm. That's why Oriskany Arms got my attention when I learned it was adding its 1911 Survivor 500FP model to the company's lineup of excellent 1911 pistols.





GET A GRIP ON SURVIVAL.

ORISKANY ARMS OFFERS A 1911 PISTOL WITH SURVIVAL GEAR STORED IN THE GRIP PANELS.

BY STEVEN PAUL BARLOW

JUST THE ESSENTIALS

The pistol features a few survival essentials tucked into hollowed-out sections in the underside of the grip panels. There is a concave reflector that can be used as a signal mirror. Insert the included tinder wire into a hole in the reflector, and it becomes a solar fire starter. There are also three fish hooks, a button compass, a length of fishing line, razor blade, four strike-anywhere matches and a couple of water purification tablets.

These basic items aren't intended to replace the normal outdoor equipment you should be carrying, but they can help get you through a tough, short-term situation if you are caught otherwise unprepared. At the very least, it's always there in the grips of your pistol as an unobtrusive backup to your regular gear.

Current 1911 owners are not out of luck either. While Oriskany Arms began by offering the 1911 Survivor 500FP as a complete package, the company is now offering just the grips in what it calls its Survival Grip Bundle. The grips will fit any 1911 of standard specs. There is no modification needed: You

SPECIFICATIONS

1911 Survivor 500FP

- **MANUFACTURER:** Oriskany Arms
- **BARREL:** 5-Inch match grade, 1:16 LH twist, 416 SS ordnance-grade steel
- **OVERALL LENGTH:** 8½ Inches
- **CAPACITY:** 7 plus 1
- **SIGHTS:** Trilicon night sights
- **SLIDE:** Machined from 4140 heat-treated bar stock
- **FRAME:** Cast from 4140 heat-treated steel
- **FINISH:** Cerakote
- **MSRP:** \$1,095
- **URL:** www.OriskanyArms.com



◀ Above: Magpul Flat Dark Earth Cerakote finish is just one of eight color options available on the 1911 Survivor FP.



◀ Far left, top: All Oriskany Arms 1911 pistols must meet a high standard of accuracy and reliability before they leave the factory. (Photo: Oriskany Arms)



◀ Left: The mini survival kit contained inside the grips of the Survivor model includes a solar fire-starter/signal mirror combo, strike-anywhere matches, compass, water purification tablets, fish hooks and line, and a razor blade.

◀ Far left, bottom: The Oriskany Arms 1911 Tactical FP proved very accurate with a variety of ammo. Typical was this 2½-inch group with imported Perfecta ammo.



simply remove your old grips and replace them with the new survivor grips.

START WITH A GREAT GUN

The 1911 Survivor 500FP starts with the Oriskany Arms 1911 platform pistol, which is an excellent all-around pistol at a reasonable price. I tested one of its Tactical FP models recently and came away believing that, at slightly less than \$1,000, it is the best 1911 for the money on the market. I ended up buying the gun.

Incidentally, the "FP" in all of their model designations stands for Fermer Precision—a sister company of

SHOOTING RESULTS

These results were tallied from shooting the Oriskany Arms 1911 Tactical 500FP, which differs from the Survivor model in that it didn't come with the survival kit grips and had a nickel finish instead of Cerakote.

AMMUNITION	VELOCITY	AVG. GROUP SIZE	SMALLEST GROUP
Perfecta 230-grain FMJ	927 fps	2.12 Inches	2.00 Inches
Winchester (white box) 230-grain JHP	933 fps	2.18 Inches	2.00 Inches
Federal 230-grain FMJ	837 fps	2.35 Inches	1.50 Inches
Remington 230-grain MC	833 fps	2.00 Inches	1.75 Inches

Note: Groups consisted of five shots at 25 yards fired from a rest. Velocity was measured with Crony chronograph 8 feet from the muzzle.

"THE 1911 SURVIVOR 500FP STARTS WITH THE ORISKANY ARMS 1911 PLATFORM PISTOL, WHICH IS AN EXCELLENT ALL-AROUND PISTOL AT A REASONABLE PRICE."

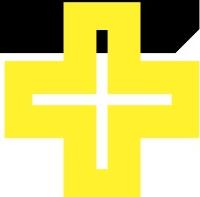
Oriskany Arms under the Giotto Enterprises banner that has been manufacturing firearms parts since 1947.

Oriskany Arms offers 1911 pistols that range in price from \$749 to \$1,095. They are available with or without a tactical rail or night sights and come in various finishes, including a basic black oxide or Cerakote in several colors. My tactical model, with rail and night sights, has the optional tough-as-nails, nickel-boron

GEAR IN THE GRIPS

The Oriskany Arms Survivor Grip Bundle includes the following:

- 1911 GRIPS (BLACK PLASTIC)**
- CONCAVE REFLECTOR/SIGNAL MIRROR/SOLAR FIRE STARTER**
- TINDER WIRE (FITS ON REFLECTOR TO HOLD TINDER AT CORRECT FOCAL DISTANCE)**
- BUTTON COMPASS**
- THREE FISH HOOKS**
- FISHING LINE**
- RAZOR BLADE**
- FOUR STRIKE-ANYWHERE MATCHES**
- TWO WATER PURIFICATION TABLETS**



finish that's weather- and corrosion-resistant to the extreme.

Within the past year, the company also introduced two smaller 1911 pistols: the 425FP and the 350FP, with barrel lengths of 4.25 inches and 3.5 inches, respectively.

All Oriskany Arms 1911 pistols are made in central New York using all-U.S. parts. The forged slides are hand fitted to the steel frames. The triggers are hand fitted, as well. There are many semi-custom 1911s on the market, but most of them carry a price tag of more than \$2,000. Oriskany Arms somehow manages to deliver the personal touches for the price of a mass-produced, assembly line gun.

The 1911 Survivor 500FP has a suggested retail price of \$1,095. It features tritium night sights, a tactical rail, skeletonized hammer, three-hole trigger, extended thumb safety, beavertail grip safety, flat mainspring housing and a Cerakote finish.

All Oriskany Arms 1911s are tested for functional reliability and accuracy. Each pistol must shoot at least 2.5-inch

Below: The gear inside the survivor grips isn't designed for long-term scenarios, nor is it intended to replace regular gear in your kit. But it can provide a measure of assistance if you are caught otherwise unprepared.

groups at 25 yards or it doesn't leave the factory. Mine shot better than that, with 2-inch groups or better being the norm. It also proved to be 100 percent reliable, with no break-in period.

These pistols feature a Series 80-style firing pin block that adds an extra measure of safety to ensure the firing pin can't contact the primer of a chambered round unless the trigger is pulled. It had no noticeable effect on the trigger pull. The trigger pull on my test gun was about 3½ pounds, and it broke crisply, with no creep.



"THERE IS NO MODIFICATION NEEDED: YOU SIMPLY REMOVE YOUR OLD GRIPS AND REPLACE THEM WITH THE NEW SURVIVOR GRIPS."

Below: Basic survival gear is stowed in hollowed-out sections inside the pistol grips.



Above: Flathead screws are provided with the Oriskany Arms Survivor 500FP model so the grips can be easily removed in the field with the base plate of the magazine.



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◀ A Sleep Pod bivy shelter is included with the Survivor Grip Bundle and can serve as a temporary emergency shelter from the weather and biting insects.

"THE PISTOL FEATURES A FEW SURVIVAL ESSENTIALS TUCKED INTO HOLLOWED-OUT SECTIONS IN THE UNDERSIDE OF THE GRIP PANELS."

WHERE THERE'S SMOKE ...

The folks at Oriskany Arms sent a Survivor Grip Bundle to me. I put the grips on my Tactical model. One difference is that the grips of the 1911 Survivor 500FP model are secured with flathead screws instead of hex screws so that the grips can be removed in the field with a spent casing or the front edge of the magazine base plate.

It wouldn't be fair to test the fishhooks and line, because I have demonstrated my inability to catch fish many times in the past. However, I did test the solar fire starter.

I inserted the tinder wire, which is about 3inches long, into the hole in the concave reflector. You can use many different kinds of tinder. I chose a small piece of char cloth and stuck it on the end of the tinder wire.

The idea is to tilt the reflector until bright sunlight (the one necessary thing not included in the kit) is focused on the tinder at the end of the wire. I was skeptical.

Nevertheless, I played with it for a couple of minutes. Suddenly, I got the angle just right, and the tinder began to smoke. I looked closely and found a glowing ember, which I added to a larger tinder bundle I had ready. I had fire in short order.

A LITTLE SOMETHING EXTRA

The 1911 has always made a good companion, regardless of the setting. This Oriskany Arms 1911 Survivor 500FP model is, first and foremost, an excellent pistol ... it just happens to have a little something extra in the grips when you trek in more remote areas. **ASG**



A PLACE TO TAKE SHELTER

Besides the 1911 survivor grips, the Oriskany Arms Survivor Grip Bundle includes a Sleep Pod emergency bivy shelter that rolls up to stow in a small nylon bag and weighs just 2 pounds. That shelter, complete with zippered door and two windows, can be staked down at the corners to provide just enough room to get out of the weather and away from the bugs in an emergency. It would also be a great addition to a go-bag or a survival bin in the back of your car.



◀ The Sleep Pod bivy rolls into a small package that stores easily with your other emergency gear in a survival pack or car trunk.

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THE CANE IS ABLE

A wide-angle photograph of a river scene. In the foreground, the river flows from right to left, with its surface showing white foam and ripples. Large, smooth boulders are scattered along the riverbed. In the middle ground, a rocky shoreline curves along the river. The background features a massive, layered rock cliff face, with sunlight illuminating the upper portion and casting deep shadows on the lower slopes.

A SURVIVAL STICK CAN BE YOUR BEST FRIEND.

BY BARTON BOEHM

My introduction to the use of a stick as a valuable tool was during my martial arts training. The stick was introduced to me as a weapon for self-defense, but also as my best friend for survival. The use of a stick for self-defense and survival could fill volumes; however, I will focus on survival and some self-defense uses.



"IN FACT, JUST HAVING A BIG STICK WILL FEND OFF MANY POSSIBLE ASSAULTS BEFORE THEY EVER EVEN HAPPEN."

The human race has used the stick for as long as we know. All peoples of the world used the stick for some purpose. Primitive people used the stick for digging, catching game, inspecting animals' holes, looking under rocks for snakes and for many other purposes. The stick, the rod, the scepter—each was used by a sovereign as an emblem of authority and power.

My first introduction to the use of a stick as a weapon and survival tool was in my martial arts training after the Korean War. I found a martial arts teacher and lived in his home for four years. Martial arts was my life, and I rarely slept more than about four hours a night.

My teacher trained me in three basic stick sizes: short (about 3 feet); medium (about 5 feet) and long (about 6 feet). These are not fixed dimensions but a starting point based on individual size and preference.

I used the stick primarily as a weapon, but as my training advanced, it became my best friend and survival tool. I learned to never leave my stick behind, and I kept it by my side 24/7, even while sleeping and while in the bathroom.

Everywhere I traveled throughout Japan during this period, I carried my stick—when I was on a motorcycle, train, cab, car, walking, and even into the bathhouse. Each day, I learned a new technique or a new way to use the stick as a survival tool. I learned the many ways of carrying it, whether vertical, horizontal, right hand, left hand or in motion. I also learned how to walk with the stick on flat ground, uphill, downhill, over rocks, fording streams, resting on the stick and lifting my body up and over some object.

It became so natural to me that I lost the self-consciousness of carrying it. I got to the point mentally at which the stick and I were one and the stick became invisible as a separate entity.

People expected to see me with a stick.



➤ Above: The ends of the stick are rounded off to prevent splintering and a uniform contact point with the ground.



➤ Part of the author's collection of sticks he accumulated over the years. Different lengths and designs suit a variety of situations.



◀ Don't rush the process; choose your stick carefully, making sure you're comfortable with its weight, length and diameter.

Accessories include wrapping the stick with paracord for use as a grip. You can secure a strap your hand can pass through and grab the stick. I use a dog collar for this. Sometimes, a hard metal insert can be added into the end of the stick to improve wear. There are other things you can do, as well. Let your creativity take over—as long as the above requirements are met.

WALKING WITH A STICK

When walking with the stick, whether you are right- or left-handed, you should alter the stick from hand to hand in order to balance the muscles and to let each side of your body get used to the stick.

The stick should be used in a rhythmic way. You will find this natural swing once you make a habit of keeping it with you all the time. Look at where the stick is landing to avoid rocks, holes, rotten wood, soft ground and other hazards. Take your time, and practice moving and placing the stick in a rhythmic manner. Also practice mindfulness as you walk. To learn how to let the stick guide you takes time, and it takes practice.

◀ Below, left: Proper placement of the stick for each uphill stride improves progress and stability.

◀ Below, right: The author demonstrates the usefulness of using a stick while making his way down a hill.

USING STICKS ON HILLS

When traveling uphill on a gentle grade, place the stick first, but do not lean on it. Balance yourself as you move your foot toward the stick. Do not reach the stick

CHOOSING YOUR STICK

Let's talk about the stick itself: materials, size and accessories. There are many types of materials to choose from: wood, plastic, carbon-fiber and metal, among others. My preference is wood—some type of hardwood such as oak, walnut, ironwood (*Lignumvita*), ash, hickory or birch. The heart of the tree is the best, but that's not an absolute must. However, it should be free of knots and flaws of any kind, with no rough areas. For hiking and general survival, a good stick length should measure from the ground to your armpit. It is not an absolute measurement; use it as a starting point as you determine your own needs and preferences.

The diameter of the stick should be 1 to 1½ inch. Remember, this stick might be needed to support your entire body weight. It should also be sturdy enough to use as a lever and break bones (animal ... and human). Anything less should not be considered a "survival" tool.

Finally, the ends of the stick should be rounded off so they don't splinter.





PHOTO BY: JORDAN SIEMENS



GETTYIMAGES.COM/BY: JORDAN SIEMENS

"THE WHOLE IDEA BEHIND THE USE OF THE STICK IS THAT YOU AND THE STICK ARE ONE."



GETTYIMAGES.COM/BY: JORDAN SIEMENS

out and lean on it, because that is not balanced. With practice, the distance will come naturally.

When traveling uphill on a steep grade, place the stick first. Turn your feet perpendicular to the rise of the hill. Move one step at a time, and move both feet before moving the stick again. Look for good placement before planting the stick. Remember: There is no rush. Let your body and stick pick their way up the hill.

When traveling downhill, gently place the stick first, and do not lean on it. Move toward the stick one foot at a time. When traveling downhill on a steep grade, place the stick first; turn your feet perpendicular, and step toward the stick, using it for balance.

If the grade of the hill you're ascending or descending is very steep, you might need to use a zigzag or switchback method so you do not lose your balance. It is very easy to lose footing on steep grades, and if you fall, you'll most likely wind up with some cuts and bruises. So, go slowly and easily, with precise movements. Always remember to use your body, and do not let your body use you (by being in a hurry).

STREAM CROSSING

You might run into a stream you need to cross. Take the time to observe it: how wide and deep it is, how fast the water is moving and what the shoreline looks like where you want to cross. Are there hazards upstream or downstream?

If you fall, where will you end up? In my training, I had the experience of crossing a river that was waist deep. Without my stick, it would have been impossible to cross.

You can check the speed of the stream by throwing a stick upstream and watching it pass. It will indicate how safe or dangerous a stream crossing might be. You might end

up looking for a better spot to cross (in general, the wider the stream is in a particular spot, the shallower it is).

Of course, as you go, you can use your stick to probe ahead to determine depth and the type of bed you'll encounter with each step.

Faster water means more pressure on your body, and it will be easier to be knocked off balance. If the water is moving fast and is waist deep, it is probably not safe to ford—at least not with your stick alone. If the same fast-moving water were only knee deep, it would be significantly safer.

Choose your fording point carefully, because your stick won't help you if you're in over your head.

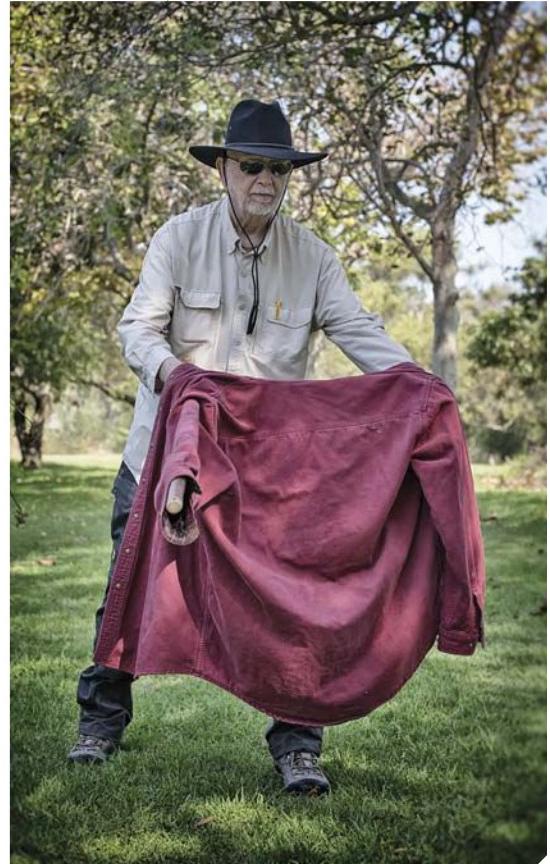
In deeper and rushing streams, use your stick to choose your route, as well as to provide added stability.

In a pinch, you can use your stick to spread a jacket or shirt to create a sight barrier between a wild dog, mountain lion or similar animal and yourself.

When you cross water, always have your toes and stick facing upstream, with your weight slightly forward. While holding the stick, move one foot at a time, step, move the stick, and repeat until you're out of the water.

Do not jump to the shore. I have seen many people jump or speed up in the last few steps, only to fall or slip into the water, getting cut or injured.

Great caution should be taken crossing water that is deeper than 1 foot. It would be a good practice to unbuckle your back pack (both waist and chest straps) so that if you fall, you won't get pinned down.



"I USED THE STICK PRIMARILY AS A WEAPON, BUT AS MY TRAINING ADVANCED, IT BECAME MY BEST FRIEND AND SURVIVAL TOOL."



► This is a guard posture that is quite useful for fending off kicks and punches.



► Assuming the "on-guard" position makes it very difficult for someone or something to approach you.

SELF-DEFENSE

There are entire styles of martial arts based on the creative and canny use of the stick, such as *aikido* and *escrima*. These are worth your consideration, because only in a *dojo* with a trained instructor will you be able to learn some of the more involved aspects of using the stick as a weapon.

FOUR-LEGGED CRITTERS

Here are some ways you can use the stick to defend yourself:

If you are hiking and you have your stick, you might encounter a stray dog, mountain lion or other intruders. Stop and quickly look around 360 degrees to see if another critter is around, and then remove your coat, shirt or jacket. While stepping back slowly, put the stick into one sleeve while holding the other sleeve.

By holding the coat in front of your body, you are creating a barrier between yourself and the critter, and it will not be able to see your arms, hands or feet. Keep backing away slowly. The likelihood of the critter following you is slim. If it does follow, start yelling at it until it backs off. Critters usually avoid a confrontation, and they will leave you alone.

Mountain lion attacks are extremely rare, but, as always, if you practice preparation 90 percent of the time, you will only have to perspire 10 percent of the time.

TWO-LEGGED CRITTERS

The other kind of animal you might encounter is the two-legged kind. The idea behind using a stick is not so much to strike but to fend off the attack and keep the offender at a distance. By holding the stick out in front of you, most attacks can be fended off.

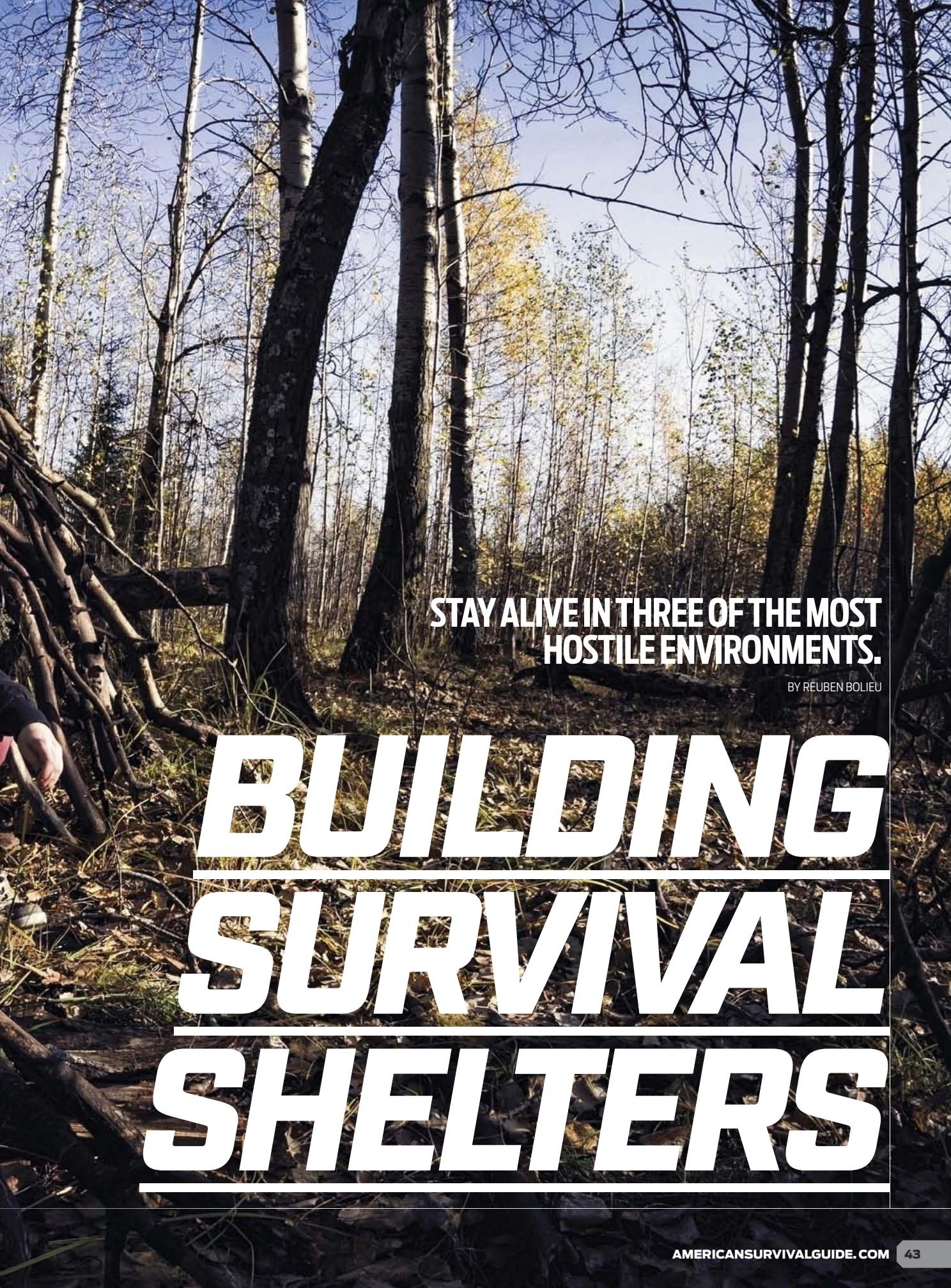
Poking, jabbing, parrying and even swinging the stick can keep an attacker at bay. The idea behind all self-defense and survival situations is to get out of harm's way.

Always be alert, and think "prevention." In fact, just having a big stick will fend off many possible assaults before they ever even happen. A big walking stick will cause most attackers to think twice. Only the most adept muggers will bother someone so armed.

A stick is a most wonderful survival tool that can always be there for you. It's dependable and has no moving parts; and you can make your own or buy one that suits your needs.

Think of a stick as a great companion—and never leave home without it. **ASG**



A photograph showing a person's hands and arms as they work on a simple survival shelter made of branches and twigs. The background is a dense forest of tall trees, some with bright yellow autumn leaves. The scene is lit by bright sunlight.

**STAY ALIVE IN THREE OF THE MOST
HOSTILE ENVIRONMENTS.**

BY REUBEN BOLIEU

BUILDING SURVIVAL SHELTERS

Hiker Lost in the Wild"—an all too common news headline. We might

all have had that feeling at one time or another of a sudden loss of orientation. It doesn't take much before the feeling of panic strikes.

More than wild animals and the bogeyman, there is nothing more dangerous than the unknowns in our environment. Most people who perish in the wilderness do so from exposure. Weather can quickly change, and what starts out as a clear, sunny day can easily end up a long, cold, snowy night.

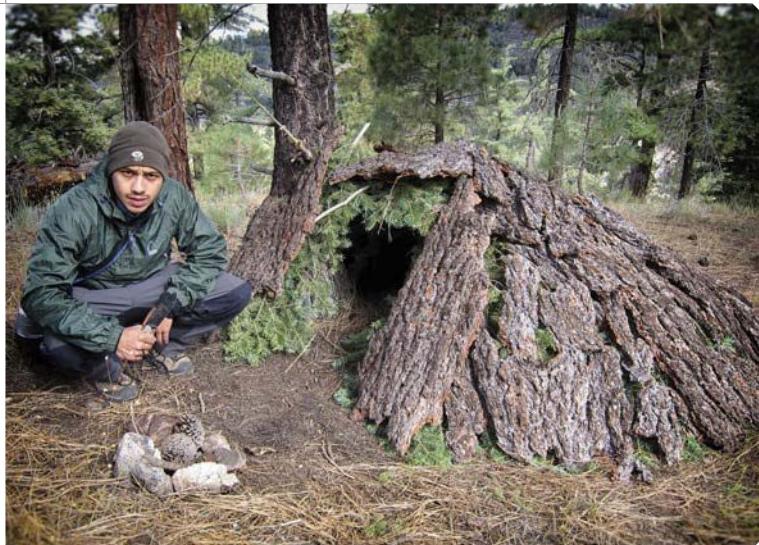
Here are a few simple—but useful—tips to help maximize your chances of enduring an unexpected night in the wild inside easily constructed shelters.

These survival shelters can be constructed using common tools you might be carrying with you during a hunt, fishing expedition, hike or while out shooting for the day. These tools are usually small fixed-blades and multi-tools.

WOODLAND SHELTERS

A debris hut is a shelter that is easy to make but requires some work and a generous amount of time. Most of the

At higher elevations, there are more materials for building survival shelters. Hemlock, spruce and furs make good thatching. This shelter was made at about 7,000 feet elevation and in high winds. Large panels of bark were used to add more protection, as well as to keep the boughs in place.



"MOST PEOPLE WHO PERISH IN THE WILDERNESS DO SO FROM EXPOSURE."

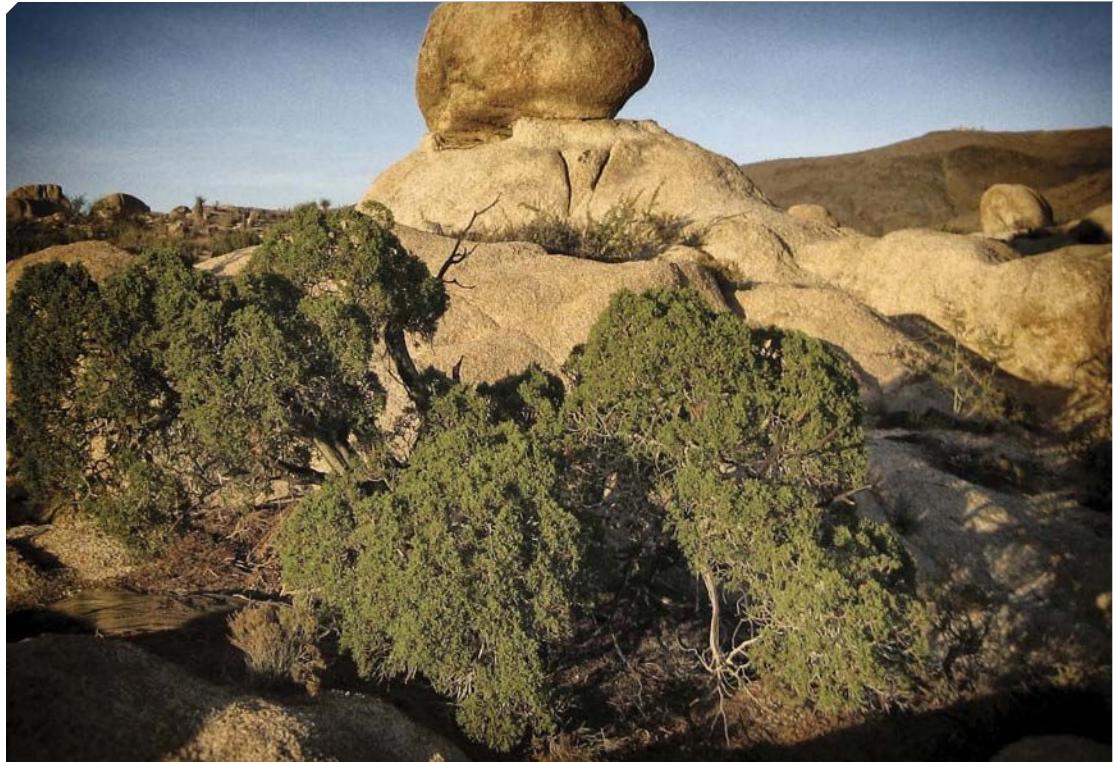
construction can be done with your hands and a decent pair of gloves for protection against splinters, thorns and creepy-crawlies.

One tool that is very small and lightweight is a Swiss Army Knife, which is often considered standard gear for many outdoorsmen. Many models are equipped with a great wood saw perfect for cutting tree boughs for the construction of a debris hut.

Longleaf pine trees (loblolly, slash, Eastern white and Virginia pine) grow in the southern area of the United States and are quite useful in constructing a debris shelter.

Lash a ridge pole about as long as your height—plus one more arm length—to a tree at about





◀ A grove of juniper trees can be a good place to take refuge, but it is not the perfect natural shelter. Nevertheless, these trees provide materials for making a shelter.

◀ The author came upon this natural shelter in Arizona while he was hiking. It provides overhead protection from rain, sun and some wind. Small caves and outcrops such as this one are common in the desert.

waist height. Boughs are usually located very high up on the tree, but the forest floor might be blanketed with them already. They are not bushy enough to use as they are, so create the shelter's ribs by leaning small, dead sticks against the ridgepole until it looks like a dinosaur skeleton.

Using whatever you have available, gather and place several armloads of dry pine needles on top of the shelter. It should look like a dome and have no pieces of wood sticking out; this will prevent water from channeling back inside the shelter.

Finally, put a mound of pine needles inside the shelter to create the bedding, which is very important. In survival classes, this is where most students go wrong and ultimately spend a long, cold night.

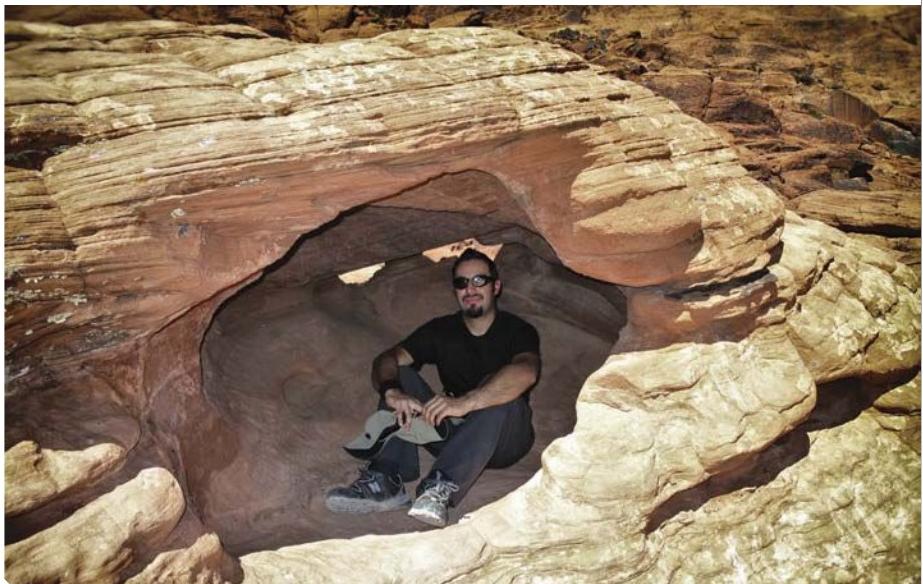
At the entrance, pile insulating material that you can drag inside the shelter to close the entrance. You can use a backpack if you have one. Finally, add bark shingling material or branches on top of the debris layer to prevent the insulating material on top from blowing away in heavy winds.

ARID LANDSCAPES

First and foremost, it is important to get out of the sun, because it will dehydrate and exhaust you in a matter of hours.

Options that offer the most shade possible with the least amount of work are the key to a good desert shelter.

Less water means less vegetation and



"DRY GRASS MAKES GOOD INSULATION AGAINST THE HEAT AND COLD OF THE DESERT FLOOR—WHICH CAN SOAR UP TO 190 DEGREES FAHRENHEIT OR MORE."

overall growth. This makes locating shelter materials harder, but not impossible. Knowing what to look for is essential.

Juniper and cedar trees are common in Southwestern deserts and offer a place of refuge from the desert heat. But don't expect to hunker down under a juniper tree—or any tree, for that matter—and expect to stay bone-dry if it rains. Nevertheless, a grove of trees will offer shade from the sun and protection from the wind.

In my opinion, rock shelters are the best natural shelters the desert can offer. They are often well shaded, keeping



"REGARDLESS OF THE TYPE OF SHELTER YOU FIND, BE SURE TO CHECK FOR NASTY 'NEIGHBORS' BEFORE SETTLING IN."



you out of the direct desert sun and offer maximum protection from the wind and rain.

If you can find a rock shelter that is tall enough to sit up in and long enough to lay down flat with your legs straight, you are off to a good start.

Keep in mind that creating a fire inside these types of rock shelters can be dangerous. You must warm up the small area slowly to prevent the rocks from chipping off (and crushing you while you sleep).

Any natural shelter can be enhanced by building a small rock wall in front of a cave or rock overhang to cut down on wind and improve overall mental security.

In the summer months, flash floods can be killers. Even though the desert might be dry for the moment, there could be a storm miles away in higher elevations that can cause floods. Take note of natural-looking drainage areas that can be flooded out and avoid them.

If you are near a stream or river, willow trees, quaking aspen and cottonwoods offer great resources for shelter-building materials. (When gathering shelter materials, stay on the lookout for snakes and scorpions that could be hidden in dry grasses and rocky terrain.)

If materials are readily available, you can construct a desert debris hut similar to the ones I have already described. Dry grass makes good insulation against the heat and cold of the desert floor—which can soar up to 190 degrees Fahrenheit or more. Juniper tree bark can also serve as ground insulation, as well as overhead thatching. In addition, enough bark will make for a lofty bed.

Regardless of the type of shelter you find, be sure to check for nasty “neighbors” before settling in. With shade at a premium, there is a good chance you won’t be sleeping alone.

THE JUNGLE

In a jungle environment, there is an abundance of materials that can be used to construct a shelter. Night falls quickly beneath the jungle canopy, so it is important to start building a shelter early. And, having spent many nights in the jungles of Venezuela, Peru, Thailand and the Philippines, I can confirm that sleeping up off the forest floor—as far away from ants and other insects as possible—is vital to survival.

Life in the jungle without a machete is pretty miserable, to say the least. If you happen to be hiking in the jungle with a machete, you can build a pole bed. It can take anywhere from two to six hours to construct it correctly and safely.



◀ Above: The author made this camp with a bow saw and hatchet. It resembles a common survival/camp shelter made by our forefathers. It uses a large tarp for overhead protection and a wooden pole bed, along with a reflector wall for creating a microclimate with a fire.



◀ Left: This is what the ribbing looks like underneath a debris shelter. Notice the layer of insulation already put inside the shelter before the final debris is applied.

There are variations of this type of shelter, but this is how I've done it. You will need four Y-shaped poles for the foundation. Stick them in the ground about waist high and arrange them in four corners like bed posts, making sure to space them a little wider than the width of your shoulders. Do not use dry, brittle wood, because it can crack or break when supporting your weight.

Next, cut two support poles that will rest directly on the Y-shaped posts—one for the head end and one for the foot end. These serve as the support bars for the longer poles that will run parallel to your body.

▶ Above left: In Louisiana, this debris shelter was made during a survival class using debris from the forest floor. This shelter has a porch for added protection. It rained all night, but in the morning, the inside was bone-dry.

▶ Right: The author camped under this Mylar space blanket and slept with only his clothes on and a fire in front of him for warmth. He used a garbage bag filled with debris as a mattress.



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PHOTO: SILVERLINE FILMS

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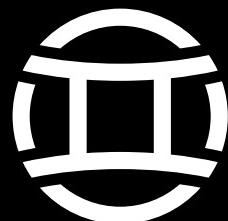
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◀ This is a common pole bed shelter for the tropics—where getting up off the ground is vital. A mosquito net is one of the most important pieces of gear in the jungle. This shelter was built in the Peruvian jungle using a Tramontina machete.

SURVIVAL CUTLERY

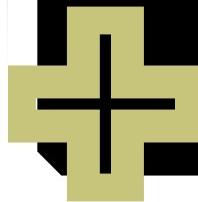
Skills and a sheath knife will be your two best friends when it comes to survival.

Stout fixed blades from TOPS Knives and ESEE Knives really sum up the term, “survival knife.” These two companies have long been the industry standard for dependable tools and customer service.

Both companies manufacture an assortment of choppers for heavy lifting. I’ve used machetes from TOPS and ESEE in the Peruvian Amazon jungle for years, as well as in the Northern woods. However, a small fixed-blade knife is capable of every type of survival task—fire craft, batoning, carving, light chopping, making traps, cleaning game and about 50 other ways to apply a knife to wilderness survival.

Swiss Army Knives are more or less the best type of multi-function survival tools one can own. The models that have a saw, large blade, awl and a pair of scissors will put you ahead of the game.

For years, I have always carried a Victorinox Swiss Army Knife while in the woods. The stainless steel is easy to sharpen and maintain. The wood saw and awl are the gems of these tools—always sharp and capable. The size is just right to ensure it lives in a pocket or survival pouch. When it comes to survival tools, simple is better!



◀ Right: In the Philippines, bamboo was used to construct this type of pole bed while the author was taking a jungle survival class. In the jungle, a tarp and mosquito net make life a little easier.



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A light blue SUV is parked on a dirt road next to a stream in a dense forest. The water is shallow and muddy, reflecting the surrounding greenery. The vehicle is positioned on the right side of the frame, facing towards the left where the stream begins.

PLANNING THE LOAD FOR HITTING THE ROAD

TEXT AND PHOTOS BY KEVIN ESTELA

VEHICLE READINESS



Do not attempt to drive through water or mud whose depth is unknown. Water obstacles can quickly disable your vehicle. If traveling with a single vehicle, recovery will require serious effort. Scout your path. (An ounce of prevention ...)

As survivalists, our readiness plan should be composed of considerations for the person, the vehicle, the workplace and, of course, the home. We are strongest at home, and most of our prep can be found where we reside. Everyday-carry items are generally non-issues, because most *American Survival Guide* readers will likely have some combination of tools in their pockets.

We don't have to be reminded of the importance of having gear on us to address life's inconveniences and the realistic threats we are aware of. Even further, the workplace is a location we might already have plans and preparations to deal with emergencies.

Surprisingly though, one often overlooked area for readiness is the vehicle. You've likely heard the term, "bug-out vehicle" and have probably entertained some comical discussions about an up-armored bus (*à la Dawn of the Dead*), a jacked-up SUV or even an old Volkswagen Beetle (don't laugh; this appeared in ASG in the 1990s). We have an idea of what vehicle we want, but what about the vehicle we have? We have to work with that—our daily driver.

Right: Your path to safety could require making your way around or through obstacles such as this. Are you prepared to do so? Are you willing to do what it takes to move away from danger?

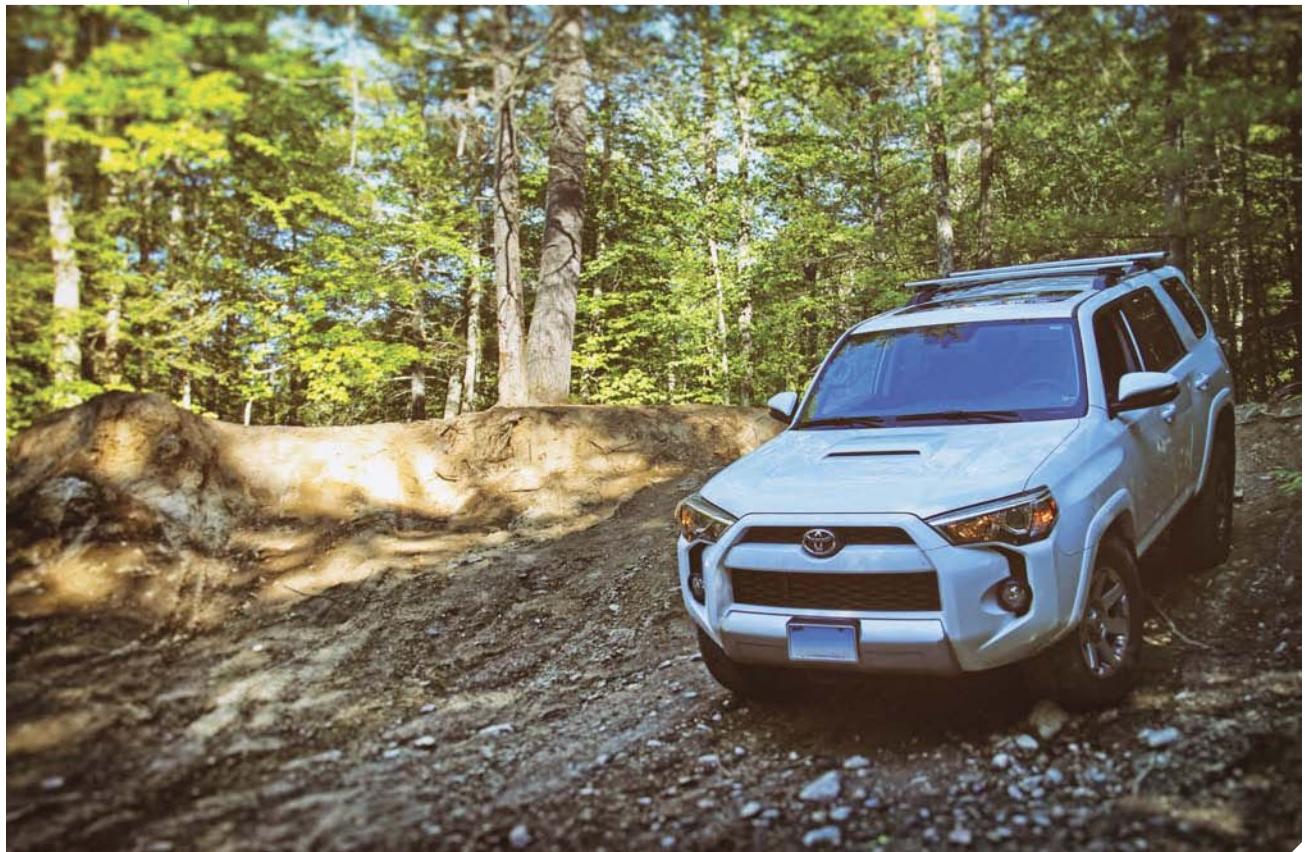
After teaching survival skills for years, I realized that many incredibly seasoned outdoorsmen leave a gaping hole in their readiness plan by not understanding how to utilize the car they have.

It's time to make some adjustments to your existing vehicle with these common-sense considerations, suggestions and techniques.

STATUS

You should always know the status of any weapon you carry. Is it loaded? If so, is it chambered? How many rounds are left? You trust your life to your weapon ... you trust it to your vehicle, right?

Right now, without looking, do you know how much fuel you have in your tank? When was the last oil change? How much pressure is in each of the tires? What provisions do you have in your trunk or cab? These are all important questions you need to be able to answer.



"CHANCES ARE, YOU'LL FACE DANGER MORE FREQUENTLY IN YOUR VEHICLE THAN JUST ABOUT ANYWHERE ELSE."

Part of vehicle survival is adjusting your mindset. It's easy to fall into a sense of security when you get into your car. It might be a break from your screaming kids on the way to work or the time when you listen to your favorite radio station.

In reality, your car protects you on the roads that, statistically, have a higher chance of killing you than an encounter with an armed assailant. Motor vehicle fatalities far outnumber those from violent crime. If you truly care about your safety, you will treat your vehicle like a weapon, because it can be used as one. It is your tool to escape danger, and you must make sure it is ready to do so.

SUGGESTED GEAR

Just as missions dictate gear, what will likely befall you will be the foundation for beginning your preparation.

Most emergency situations in vehicles are the result of an accident that causes bodily harm. This means you should have first aid and trauma gear within reach. Not far from me at all times are a tourniquet, basic trauma kit and cell phone, stored in the center console for immediate access. This small, belt-mounted kit can be quickly thrown on if I need to leave my vehicle. All other vehicle kits' components should have redundant, less-portable and more-capable gear that covers the basics of your EDC pocket-carried gear.

Depending on where I am traveling, any number of firearm support bags are carried with extra ammo, relevant cleaning/maintenance tools and accessories. If you are planning to grab a rifle or shotgun for the road, always have the kit to back it up. Even the humble .22 rifle should have a bag with spare mags and ammo, cleaning kit with lubricant and compact tools for disassembly.

If you routinely keep a firearm in your vehicle—for instance, an AR15—you must know the laws around storing ammo, as well. Are loaded magazines illegal? If so, think about carrying stripper clips and a magazine loader. This setup allows you to quickly get your weapon gassed up and into the fight while respecting the law in calmer times.

Most importantly, the kit you carry in your vehicle should be designed to keep your vehicle running. Make sure your kit has spare fluids, battery pack/cables, parts and the tools necessary to keep it rolling when obstacles get in the way. Consider the types of road you



6 BUG-OUT VEHICLE MUST-HAVES

BOLT CUTTERS: Cutting locks on fences or the fencing material, itself, is safer than crashing through. It also makes less noise. But do not damage property unless you are in an actual emergency.

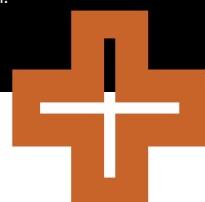
HIGH-LIFT JACK: A high-lift jack can be used for lifting a vehicle higher than a standard jack. It is also capable of pulling vehicles like a come-along. This jack is a must for off-road travel (as long as you know where to place the jack to lift your vehicle).

SLEDGEHAMMER: What better tool for crushing objects in your way than a sledgehammer? Carry a long-handled version, because your vehicle will likely have room for it.

CHAINSAW OR AXE: Storms bring down branches that might need to be cut to get them out of your way. A well-tuned chainsaw with sharp chains will lop logs quickly, and an axe will never run out of fuel. Carry one or both, if you can.

CORDAGE: Duct tape and 550 paracord should be essentials in your ruck; and more-substantial rope should be included in your vehicle kit. Even cam straps and ratchet tie-downs should be included to secure loads and fashion log bridges.

SHOVEL: Used for more than digging out, a shovel can be used to build ramps out of earth. A long-handled digging shovel should be carried to prevent "e-tool fatigue" and back pain.



◀ Bottom, left: Always have a trauma kit within reach in your vehicle. Pictured is the author's Multi-Mission Medical Taco from HSGI, which contains compressed gauze, a tourniquet and Israeli bandage.

◀ Bottom, right: Do you know the legality of loaded magazines in your vehicle? A simple solution might be loaded stripper clips and a speed loader such as the Mag-Lula. With just a few motions, magazines can be fully gassed up and ready for use.



ACADEMI OPEN DRIVER COURSES



Situated on a remote campus in Moyock, North Carolina, Academi is a professional training facility for military, law enforcement and concerned citizens.

Of the many courses offered at Academi, the Open Driver courses are some of the most popular, allowing students to drive Crown Victorias around a closed course at high speed and with finesse. Instructors are experts in precision high-speed driving and accompany the students during all stages of instruction.

The Accident Avoidance course prepares students for driving emergencies found on the roads today and offers a chance to train for real bug-out driving. Students learn about a vehicle's weight transfer during braking, accelerating and turning. On a specially designed circular wet track, students learn about oversteer and understeer and how to counter the effects of each.

During driving exercises, students are taught how to maneuver their vehicles around obstacles and through turns with varying degrees of camber. Learning how to recover and transition from driving off-road and back onto pavement is also covered, as well as how to properly drive in reverse at varying rates of speed.

With limited time spent in the classroom, students are put behind the wheel to burn gas and smoke their tires, with the majority of lessons being taught on the track.

www.Academi.com

will be traveling over from point A to point B and whether you will need to carry spare cash for fuel, traction devices, cutting tools, spare food and other essentials.

Chances are, you will be on your own and won't have the luxury of extra vehicles in a convoy to provide assistance. Your vehicle

will help you carry more, but don't rely on gear, alone, as your readiness solution.

DRIVING OVER OBSTACLES

Not knowing your vehicle's capabilities could mean you become high-sided and stuck on obstacles when you need to move. Assuming you are already familiar with your vehicle's approach and exit angles, as well as ground clearance, you will understand if an object can be driven over.

In an emergency, you might have to "jump a curb" or drive over downed branches or rubble. Depending on your vehicle (FWD, RWD, 4WD, AWD), you will address driving over



► The author keeps his emergency kit items in non-descript Action Packers from Rubbermaid. One contains tools, another has overnight emergency gear, and another is filled with vehicle recovery gear.



► There are three devices pictured here that can be used for pulling a vehicle: a come-along, high-lift jack and Spanish windlass. Note the base and adapter for the high-lift for use on vehicles without strong bumpers.

obstacles differently. Regardless of your drivetrain, here is the key: Put as much power on the ground as possible. In other words, if you have 4WD and you can crawl a vehicle over an obstacle one wheel at a time, keep three wheels on the ground—providing power to those wheels—as the fourth crawls over the obstacle.

In the case of a curb, approach it at an angle. After the first wheel is over the curb and the other wheel on that axle reaches it, you'll have three wheels to provide traction. If you attempt to drive over a curb, log or feature two wheels at a time, you'll find it more difficult than going wheel by wheel.

DRIVING THROUGH WATER

After hurricanes or prolonged rainstorms, the possibility for high water is very real, and roads might become impassable as they become flooded.

Driving through flooded roadways can lead to serious trouble, so leaving an area before it floods is the best way to handle this problem. Roadways and paths that are not normally under water can wash away or become undercut, leading to deep pockets of water. Murky water can obscure underwater obstacles that can puncture tires or hang up your vehicle's frame. Remember, even a foot of

◀ Below: An assortment of tools for a bug-out vehicle: chainsaw, high-lift jack, sledgehammer and assorted recovery gear

◀ Bottom: Maxtrax recovery boards and a good shovel such as this all-steel model from Fiskars make excellent additions to a "stuck vehicle" kit. The author uses these frequently while traveling over sandy terrain.

"... MANY INCREDIBLY SEASONED OUTDOORS-MEN LEAVE A GAPING HOLE IN THEIR READINESS PLANS BY NOT UNDERSTANDING HOW TO UTILIZE THE CARS THEY HAVE."



"MOST IMPORTANTLY, THE KIT YOU CARRY IN YOUR VEHICLE SHOULD BE DESIGNED TO KEEP YOUR VEHICLE RUNNING."

water will displace approximately 1,500 pounds of your vehicle's weight. With less weight over your tires, your vehicle won't have as much traction and can be swept away in moving water.

Driving through water is not always a risky proposition. Small creeks with rocky bottoms are generally safe to drive through—if they have been scouted and are not too deep. If possible, investigate the creek to determine where the high and low points are, and pay attention to the banks for soft soil your vehicle could sink into. Bogs should be avoided, because they can trap vehicles easily.

If you are in a convoy, always have towing equipment, snatch straps and the ability to rescue a stuck vehicle. Move slowly, but steadily, through water, avoiding stopping in place and spinning your wheels.

Once you are done driving through water, always test your brakes and check your vehicle. Make sure you pull far enough away from other traffic in case the water has affected other vehicles differently—possibly making them a rolling threat to you. Look for foreign material that might have been picked up on your undercarriage and remove it.

SPANNING GAPS AND RAMPING

Washed-out fire roads and cracks and fissures could create an impassable path for your vehicle. It's hard to believe, but even a small gap is enough to halt a vehicle's progress.

This doesn't mean you can't create a solution to bridge gaps or create ramps to drive over obstacles. Use good judgment in constructing anything that will support the weight of your vehicle. This could be as simple as using a shovel to fill in a gap with earth. Consider the total weight and load balance of your vehicle, the weight placed over a single wheel and both wheels on one



➤ The author's 4Runner driver's-side front wheel atop a makeshift wooden ramp

➤ Three wooden poles tied together can create a makeshift ramp. A minimum of two poles that are wider than the tire are less likely to cause it to slip off than only one.



axle, and fortify your construction accordingly.

While there are some excellent products available for spanning small gaps (such as Maxtrax recovery boards), the reality is that not everyone will have them. One method of creating an improvised "bridge" is with logs cut from the landscape. Depending on your vehicle's weight, you will need to determine the diameter appropriate for load-bearing. Remember that hardwoods will be stronger than softwoods. This is where a chainsaw will make quick work of your task. An axe or bow saw can do the same, but with more time and effort.

When creating your bridging device, always cut it longer than the gap you are going to traverse and wider than your tires. In case it slips on one side or the other, you want to make sure you have that extra length to prevent it from falling into the gap. Additionally, you should use a minimum of two logs per wheel. A wheel on a single log can slip, but when two logs are tied together, the base is much more stable. If possible, make sure you have a spotter who will provide feedback to keep your vehicle aligned on the logs.

PULLING AND PUSHING VEHICLES AND OBSTACLES

You might need to move disabled, stranded vehicles, downed trees or dumpsters blocking your path. Depending on your vehicle's configuration, you might realize that pushing or

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➤ *Above, left:* Anytime an object can be "crawled" over with a single wheel at a time, it will yield better results than attempting to put two wheels over it simultaneously. Here, the author's friend drives his Ford Raptor over a steep ramp one wheel at a time. Note the vehicle's articulation.

➤ *Above, right:* Do you know the difference between a tow strap and a recovery strap? A recovery strap has an elastic nature, while a tow strap does not. Seek training to learn how to use both properly.



pulling works better. Without a solid push bar or bumper on my daily driver, I am left to pull vehicles out of the way, should the need arise. For this reason, I make sure I know the location of solid tow points on the front and rear of my vehicle. In a real emergency, when vehicles can be replaced and a threat to life is certain, I wouldn't hesitate to line up the forwardmost point of my vehicle's frame on an obstacle and push through.

➤ If you know your vehicle's traverse angle, a compass can be used to determine where your vehicle is at risk of tipping over. This particular dashboard display has an onboard gauge.

When pulling a vehicle, it is best to use a strap designed for this purpose, as opposed to chains, which can break and become dangerous projectiles. Recognize



that a tow strap will not stretch as much as a recovery strap designed to store energy and "slingshot" the stuck car from its position. Consider what will happen if the vehicle you're towing continues along the direction of force. Have a plan, in case there is a weak link in your pulling strategy.

In either case—pushing or pulling—the trick is to move the vehicle or object from the point with the least amount of weight over the wheels or center of gravity. In a standard forward-engine car, this means applying pressure over the rear wheels. However, in a heavily loaded pickup truck with more weight in the bed, the better option might be the front wheels. For a downed tree for example, it is best to hook a strap to the end, rather than the center. Think about how the laws of gravity, force and momentum work when two objects of varying sizes meet.

And finally, whatever work you do with your vehicle, do it slowly, if you can.

ACCELERATE, BRAKE, TURN

When was the last time you attended a formal driving course? If it was in your teens, how long ago was that? What



about spending some time to learn to unlock the potential in your vehicle?

Chances are, you'll face danger more frequently in your vehicle than just about anywhere else. Learn what threats exist and how to move away from or avoid them, stock up your vehicle to address them, and be willing to use your vehicle however you might have to. Make your vehicle just as ready as you are. **ASG**

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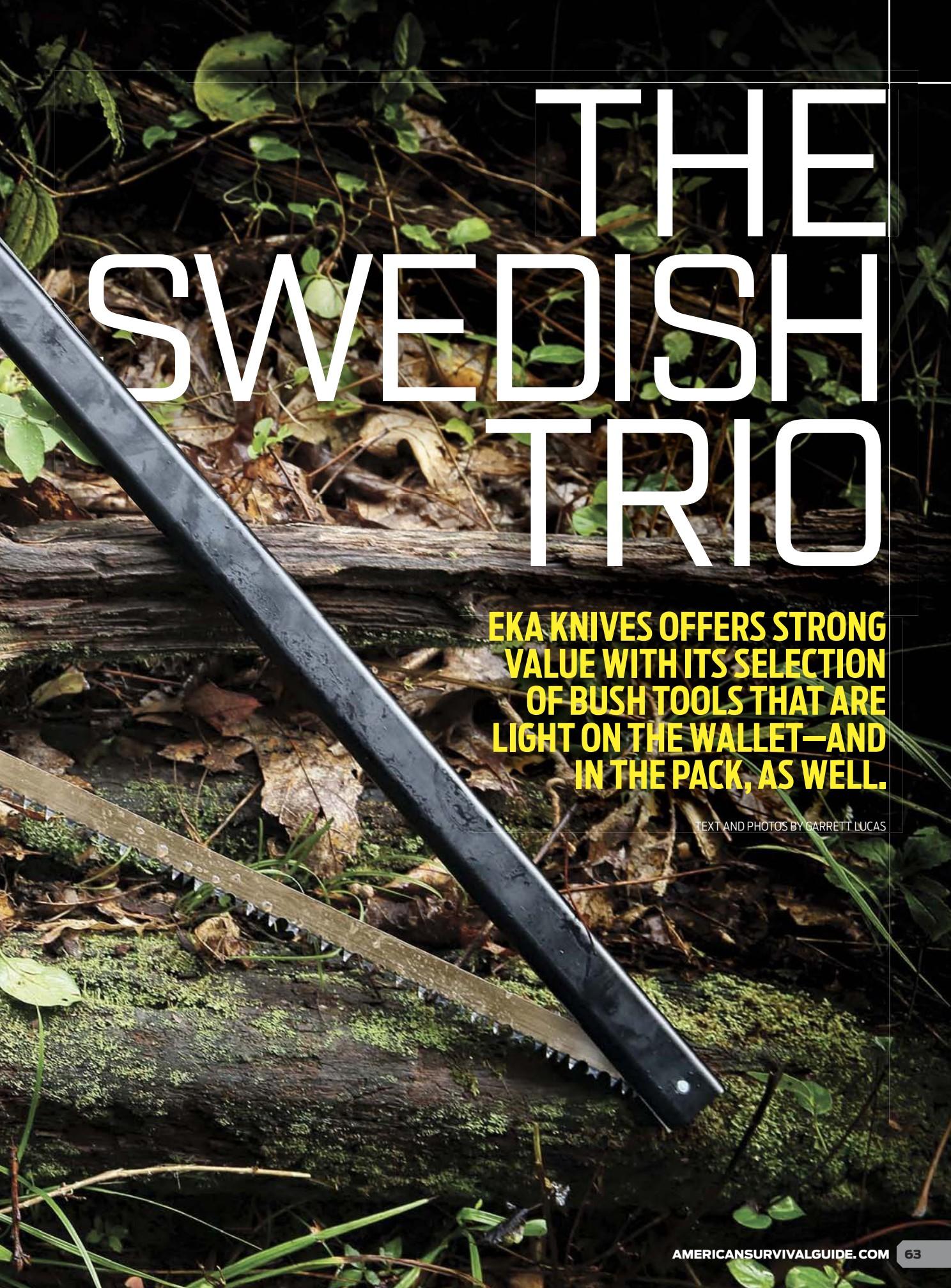
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THE SWEDISH TRIO

EKA KNIVES OFFERS STRONG
VALUE WITH ITS SELECTION
OF BUSH TOOLS THAT ARE
LIGHT ON THE WALLET—AND
IN THE PACK, AS WELL.

TEXT AND PHOTOS BY GARRETT LUCAS

"FOR THE INTENDED PURPOSE AND PRICE POINT, ALL THE EKA TOOLS PERFORMED EXTREMELY WELL ... "

► The Scandinavian heritage of the Nordic W12 shows through in its classic lines, the palm-filling grip and the Scandi-grind blade profile.

► The Nordic W12 bushcraft knife comes with its own Kydex sheath with accompanying fire steel that has an emergency sharpener affixed to the top.

For modern man, the knife is the basic tool for survival in the outdoors. With it, much can be accomplished, and in practiced hands, the chances of survival increase exponentially.

Nevertheless, there's only so much a knife with a 4- to 5-inch handle can do.

Short of creating a primitive stone axe, larger chores, such as taking down small to medium trees (or large ones, for that matter), clearing dense vegetation and splitting wood, are generally out of reach of the adventurer or someone caught in a survival situation. So, the individual who wields only a knife must navigate around these challenges and work even harder to complete the more challenging tasks.

This is why I was excited by the opportunity

to try a set of wilderness tools from EKA Knives. Although they are sold separately, they complement each other very well and can help the user accomplish just about whatever needs to be done out in the wild.

The box I received included the Viking 17-inch Combi Saw, Machblade W1 (machete) and the Nordic W12 (bushcraft knife). It didn't take long for me to get them into the woods for a little testing.

THE TOOLS

It's generally accepted that the Swedes know how to make good bushcraft tools. EKA Knives is a Swedish company that has been in business since 1882. Although I've seen some individuals in the United States working with EKA products, this company is not nearly as well known in the States as it is in Europe.

That's all changing this year, because a new U.S. headquarters has been opened to help EKA facilitate distribution and get better market penetration in our country.



➤ Far right: The out-of-the-box edge on the Nordic W12 was keen enough to easily shave hairs off the user's arm before actually getting to work.

➤ Near right: The Nordic W12 more than proved itself in the field—where having a good bushcraft knife counts most. It did an excellent job of helping the author get a good tinder pile together for a fire.

➤ Right, bottom: The Nordic W12 was extremely comfortable to work with, and the jimping on the spine was done well without being overly aggressive.

New for this year is the Machblade W1. The W1 is a light and compact machete that sports a set of serrations on the spine to ostensibly be used as a saw. The blade steel is Swedish Sandvik 12C27 with a stonewash finish. The handles are available in either an injection-molded rubber or a wood-patterned G-10. We received one with the G-10 handle.

The sheath that comes with the Machblade W1 is made of Kydex and has an open area

along the spine of the machete for easier retrieval. On the back of the sheath resides a Kydex belt clip that makes attaching the sheath to the user's belt a much quicker and easier arrangement.

Along with the Machblade, we received EKA's Nordic W12 knife, also made of Sandvik 12C27 steel. The W12 is a bushcraft knife with a Scandinavian grind. It has a full-tang construction and also boasts a wood-patterned G-10 grip.

The Nordic comes with a similar Kydex sheath that also has a belt clip attachment, but the screws can be undone, and the clip can be rearranged for different styles of carry, including horizontal.

➤ There is a bit of jimping on the spine above the handle to give the user a secure grip while exerting pressure on the knife.



Nordic W12 Knife

Specifications

- Overall length: 9.1 inches
- Blade length: 4.7 inches
- Blade thickness: .16 inch
- Blade steel: Swedish Sandvik 12C27
- HRC: 57–59
- Blade grind: Scandinavian
- Handle: Wood-patterned G-10
- Weight: 8.1 ounces
- Sheath: Kydex belt, multi-position

MSRP: \$159

URL: www.EKAKnives.com



"IF YOU'RE LOOKING FOR HIGH-QUALITY BUSHCRAFT TOOLS AT A REASONABLE PRICE, EKA KNIVES PRODUCTS ARE DEFINITELY CONTENDERS FOR YOUR HARD-EARNED DOLLAR."



◀ Despite its short length and light weight, the Machblade W1 performed much better than expected. Rather than being relegated to just smaller tasks, it's up to more-serious work.



Machblade W1 Machete

Specifications

- Overall length: 17.1 inches
- Blade length: 12 inches
- Blade thickness: .11 inch
- Blade steel: Swedish Sandvik 12C27
- HRC: 56–58
- Blade grind: Scandinavian with sawback spine
- Handle: Injection-molded rubber or G-10
- Weight: 13.57 ounces
- Sheath: Kydex belt

MSRP: \$169

URL: www.EKAknives.com



◀ Near left: Even with a blade thickness of .11 inch, the Machblade W1 held up well to batoning wood for a fire.



◀ Far left: A batch of wood for a small campfire was quickly processed with the Machblade W1, although the baton got chewed up a bit by the sawback spine on the machete.

To round out the bushcraft set, EKA Knives also sent along its 21-inch Viking Combi Saw for the larger chores. The Combi Saw is an interesting tool because of its light weight and the way it houses three different saw blades for cutting wood, metal and bone.

THE MACHBLADE W1

The Machblade W1 machete is EKA's newest offering, so that tool was given the first workout. To be honest, expectations were not extremely high, because the Machblade has a relatively short blade for a machete, and with its .11-inch thickness, there wasn't a lot of mass to build momentum during swings. Nevertheless, and surprisingly, the Machblade performed much, much better than I would have guessed.

The thickness of the blade and the blade profile made the W1 the perfect tool to

clear out vegetation for a path, chop and limb shelter poles, and for other tasks that required quick slashes and a little finesse. For those who get into the thick of things and want to harvest edible vegetation, the compact size of the Machblade allowed for easy maneuverability and precise cuts to extract only what was needed.

But the performance got really impressive when I used the Machblade to start chopping small trees—not saplings. Although it didn't feel like a lot of momentum was being driven into the wood, the Machblade W1 was still taking significant bites and quickly felling small trees with relative ease. These weren't just 1/2- or 1-inch saplings; these were trees with 3- to 4-inch diameters.

While a 12-inch machete isn't the ideal tool for this type of work, especially on a long-term basis, the Machblade W1 was definitely up to the task and was performing way beyond expectations, considering its light weight.

The only real drawback I noticed with the Machblade was with its sleek G-10 handle.

Around here, it's been raining almost nonstop since April, and when it isn't raining, the humidity is off the scales. While I worked with the EKA tools out in the field,

everything was always wet. The Machblade did slip out of my hands a couple of times, so I put a textured wrap on the handle and attached a lanyard, which I don't like to use if I can avoid it.

For batoning wood to get to the dry stuff, the W1 worked quite nicely, with pieces up to about 5 inches in diameter. Because of its flat blade profile, there wasn't enough of a wedge to get it through larger pieces without significant exertion. But you have to be realistic with expectations and recognize that there are tools specifically designed for heavy-duty work. The Machblade W1 is just a great, all-around compromise tool that can assist with several areas of work in the field.

THE VIKING COMBI SAW

The Combi Saw is a flat and relatively compact package. Once the operator is ready to use the saw, the handle is simply folded back over the long storage compartment for the blades. Then, a blade, such as the woodcutting blade, is taken out of the storage compartment by pulling back on a retaining spring that holds the blades in place while being stored.

Once the blade has been taken out of the compartment, it pivots around and back, much like the handle. A fastening hole at the end of the blade is then mounted on a retaining pin, and then, the handle is folded down completely to put tension on the blade. Everything is self-contained, with no loose parts to manage. That's all there is to getting the Combi Saw ready for work.

After using it a good bit, I found it worked best with soft woods up to about 6 or 8 inches. A live tree with a 5-inch diameter was taken down in just 42 seconds—not half bad!

Left, top: The Machblade W1 machete is a compact chopper with a 12-inch blade made of Swedish Sandvik 12C27 steel.

Left, bottom: The perfect companion in the bush, the Machblade W1 can cover a variety of tasks from food prep and carving to trail clearing and shelter building.

For giggles, I used the Combi Saw to cut a 10-inch oak log that was part of a tree that fell down about two years ago. The part that was cut was still off the ground, so the wood was very dry and very solid.

At first, the Combi Saw was making good progress, but once it got 2 or 3 inches into the hard wood, the blade seemed to have



a little too much flex happening. The blade would twist in different directions so that the front end was cutting at a different angle than the back end. This resulted in having to spend way more time than necessary with the cutting, because several adjustments

had to be made to re-orient the cuts so they would meet in the middle.

The Viking Combi Saw helps make quick work out of jobs a little too big for efficient processing with the W1 machete. The two tools complement each other to complete most necessary survival needs.

had to be made to re-orient the cuts so they would meet in the middle.

Of course, trying to cut through an oak log this size is really beyond the expectations of a compact folding saw—but it doesn't hurt to push the limits to know the tool's capabilities. The Combi Saw is best suited for small to medium cutting tasks necessary for basic survival. It was used to cut a quick baton for splitting wood and for getting clean cuts while evening out lengths of poles.

It's also a better option for projects that require precise and square cuts you just can't get by chopping. Hardwood rounds up to approximately 5 inches in diameter are going to be about the maximum size to work with. Beyond that, the return isn't going to be worth the energy spent.

THE NORDIC W12

True to its heritage, the Nordic W12 handled and performed exactly as expected. The Scandi grind makes the knife particularly useful for woodcarving, and the edge is hair-popping sharp out of the box. Unlike high-carbon steels that are often used in bushcraft knives, the Nordic is constructed of Sandvik 12C27

stainless steel that holds its edge a long time during extended use and isn't subject to the same degree of corrosion when exposed to the elements.

The G-10 grip was very comfortable, and I appreciated the small finger guard that protects against slipping up onto the blade—even though I didn't have the same issues with a slick handle as I did with the machete. This is due to the different movements of the hand that are performed with a knife, as opposed to a machete.

There's not a lot of reason to brag about a knife that will cut cord, food, packages or other lightweight items. Most any knife will do that type of work. What distinguishes one "bushcraft" knife from another is how it performs when working with wood for fashioning improvised tools, aiding in fire starting and facilitating more specialized tasks, such as building traps.

Left and above: The three blades are stored inside the metal body and held in place with a retaining spring clip.

Viking Combi Saw

Specifications

- Overall length: 20.9 inches
- Blade length: 20.7 inches
- Handle: Plastic acrylic
- Weight: 15.9 ounces
- Number of blades: Three (wood, metal, bone)

MSRP: \$89

URL: www.EKAKnives.com

Far left: The Viking Combi Saw can be used on hard woods, but it does have its limits. This oak log, with a 10-inch diameter, was tricky to get through because of the amount of flex in the blade that resulted in the two ends cutting at different angles. Best results with hard woods would be obtained with 5-inch diameters or less.



"THE COMBI SAW IS BEST SUITED FOR SMALL TO MEDIUM CUTTING TASKS NECESSARY FOR BASIC SURVIVAL."

► The Viking Combi Saw is a compact package that includes three separate blades to use with different materials, including metal, wood and bone.



Working with the W12 for extended periods was quite easy. There were no hot spots on the handle that created excessive friction, and the full, rounded grip helped reduce any hand fatigue one might usually experience with knives not specifically designed for bushcraft. It's more than obvious that a lot of thought went into this design.

OVERALL IMPRESSIONS

To truly evaluate the performance and value of tools such as those provided for review by EKA Knives, it's important to understand what they are ... and what they are not. The Machblade W1, Viking Combi Saw and the Nordic W12 are a set of lightweight tools that can be easily carried into the woods or packed into emergency kits and used to meet basic survival needs.

For the intended purpose and price point, all the EKA tools performed extremely well, even with a couple of their minor quirks. There's a rather large gap in the market right now between low-priced, but functional, Scandinavian bushcraft tools and the higher-end models that can cost a couple of hundred dollars or more.

EKA Knives has a wide range of quality tools that fill that gap quite nicely, and their performance far exceed expectations—provided those expectations are grounded in the real world.

If you're looking for high-quality bushcraft tools at a reasonable price, EKA Knives products are definitely contenders for your hard-earned dollar. With 130 years of knife-making in the heart of Scandinavia, you know this company must be doing something right. **ASG**

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* See The Blazing Hot story in the March 16 issue of ASG magazine



A dark, low-light photograph of a person from the side and back. The person is wearing a light-colored survival vest with several reflective silver stripes running horizontally across the back and diagonally down the arms. A headlamp is attached to the front of the vest, illuminating a small area of the dark background. The overall mood is mysterious and survival-oriented.

SURVIVAL ON A BUDGET

BY DANA BENNER

**SAVE
YOURSELF
...AND
SOME
MONEY**



GETTY IMAGES.COM/BY: JOE EDELE

Like you, I enjoy reading informative articles about firearms, knives and all the other survival gear. Unfortunately—also like many other people who read these articles—I can't afford to spend \$1,000 for an AR or \$600 for a knife, no matter how good they are.

Does that mean we are doomed to wander aimlessly and helplessly if something should happen? Of course not. There are ways to gather the gear you and your family will need without destroying your budget.

This article will point you in the right direction to save money while you save yourself. It can be done—if you take your time and use your head.

USING YOUR HEAD

My father always told me to “buy the best tools you can afford.” The key words here are “best” and “afford.” To do that, you need to think through every purchase. Remember, this

➤ Above: As a shopper on a budget, concentrate on targets of opportunity. Don't buy because of a great sales pitch.

is survival gear, not a washing machine. This gear will have to help keep you and your family alive if something should happen.

On the opposite side of the coin (and I hope this is true): You might never need to use any of it. When purchasing gear, you need to weigh out whether the return is worth the cost. Can you get by without that \$1,000 AR? Perhaps you can pick up a high-quality 12-gauge shotgun or lever-action rifle for half the cost. You can use the money you saved to purchase ammunition.

The point? Just because some writer or television host says, “You have to have this item to survive,” it doesn’t mean there aren’t alternatives out there. These decisions are yours, and yours alone, to make. Use your head, and think it through.

FINDING THOSE BARGAINS

Shopping around for the best deals takes time and effort, but it can really pay off in the long run. It is much easier to walk into a store and buy all the things you need—or think you need—all at once, but it is also much more costly. Take your time. Look around, and ask questions. Talk to people who are experienced in the survival game and find out what they recommend.

Yes, sometimes, you will have to go into one of those “stores” and bite the bullet to get what you want, but at least you will be informed. (Believe me, this is not usually the case.)

SPORTING SHOWS

Sporting shows are great places for picking up gear. You don’t even have to buy a lot of it. Many booths hand out free samples of everything from first aid items to fishing lures. For the price you pay to get in, you can come out of there with a haul.

“REAL SURVIVAL MEANS TAKING ADVANTAGE OF EVERY OPPORTUNITY, AND THIS IS A GOOD TIME TO PRACTICE THAT SKILL.”

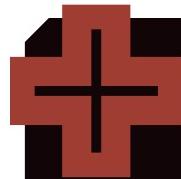


➤ Attendees look at handguns as thousands of customers and hundreds of dealers sell, show and buy guns and other items during The Nation's Gun Show at Virginia's Dulles Expo Center in October 2015.





◀ The author's pack, which he got at a popular department store, has lasted about 20 years.



GUNS AND AMMO

Just because a gun is on sale somewhere or you are able to get a great price on a used one doesn't make it the right gun for you. Before you purchase any firearm, think about what it is going to be used for. Is it for protection, hunting, both? How about availability and cost of ammunition? All this needs to be taken into consideration before you buy a gun.

Ammunition for a .22 is a good case in point. It is the least expensive round to make; yet, it is the hardest to find. Part of the reason is that many people own .22s, which increases the competition for the available rounds. The other reason for the "shortage" is that despite the demand, .22s have the lowest profit margin—meaning that despite the demand, ammo manufacturers are not producing as much. If you have a .22, buy the ammo whenever you find it.

On the other hand, there never seems to be a shortage of shotgun ammunition. A 12-gauge shotgun is the perfect firearm for both defense and hunting. Ammunition is everywhere, and it goes on sale often. There is a shotgun out there for every budget ... which makes it a great choice.

I stop at every booth and take whatever they are handing out and then sort through it later. Those items you do buy are usually being offered at "show discount" prices. Only buy what you really need. If you don't need it, it isn't much of a deal.

FLEA MARKETS AND YARD SALES

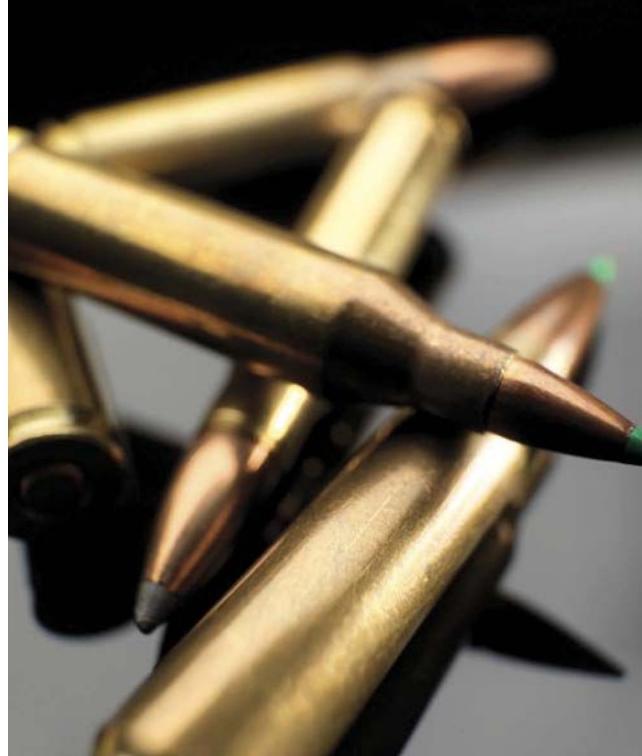
Flea markets and yard sales are sometimes great places to find gear at great prices, although it can be hit or miss. There is always someone trying to get rid of stuff they no longer want or need. Sometimes, you will hit the jackpot; other times, it will be a bust.

I once picked up everything from BDU uniforms to web gear at a yard sale held by someone who was ex-military and was just looking to get rid of things. I paid pennies on the dollar for the gear.

The trick of shopping at flea markets and yard sales is to know what you are looking for and what you are willing to pay. Do your homework, and walk in there with a plan.



◀ The author's Marlin 60 and Mossberg 500. He bought this used Mossberg 500 shotgun more than 20 years ago. It is still going strong. The Marlin 60 .22 rifle was picked up used at a great price.



Flea markets are full of booths selling junk. If the price is too good to be true, it probably is. Look at each item carefully. There are plenty of knockoffs out there. Find out where it was made to ensure it's a good value. Remember: Junk is junk—no matter how much you paid for it.

ESTATE SALES AND AUCTIONS

Sad, but true, death is a fact of life. Many times, the family members of the deceased just want to get rid of stuff, which could be good for you. Some of these items end up going to estate sales or auctions.

This is especially true when it comes to firearms. You might be able to pick up a used rifle, even an AR, for a relatively low price. There might also be other items you could use, so go with cash, and stick to your game plan. Don't get caught up in the frenzy.

You also need to check state and federal laws regarding your purchases, especially ownership and transportation of firearms. In some states, it is against the law to transport firearms across state lines without a special license.

MILITARY SURPLUS STORES AND GUN AND PREPPER SHOWS

While you will end up paying more than you will at a yard sale, these places are still usually less expensive than many big-name outdoor stores—especially if you can find good used gear.

In some cases, you might be able to work out a trade of items you no longer want for credit toward something on your shopping list. These locations typically carry a mix of new and used military items and specialized commercial products, but at least the assortment is all in one place, making your shopping much more efficient. But while some surplus stores carry firearms, many do not.

Spending time at a gun or prepper show or in an authentic surplus store is well worth the visit, especially considering that many items you'll see are on your shopping list. You can often pick up everything from boots to MREs and rucksacks to organic seeds.

Again, it is about having a plan and knowing what you are willing to spend. It is very easy to get carried away, so stick to your plan. If you had no intention of buying a gas mask, don't.



“WHEN PURCHASING GEAR, YOU NEED TO WEIGH OUT WHETHER THE RETURN IS WORTH THE COST.”

Looking for a great deal, a shopper tries on an Israeli gas mask at Kaplan's Surplus Store in San Francisco, California. There has been a surge in gas mask sales since the terrorist attacks in New York and Washington, D.C.



A shopper has located some military meals-ready-to-eat (MREs) at the Army-Navy Surplus USA store in Chicago.





MEDICINES

The key to survival is ... surviving. All the prep work in the world will do you no good if you don't keep up your health. If you use prescription medication, you need to make sure you have a good supply on hand—at all times. If something serious should happen, you probably aren't going to be able to run to the pharmacy to get a refill.

Medicines, like almost everything else, lose potency over time. The trick, whether for prescription or over-the-counter drugs, is to keep rotating your stock. In addition, don't open the sealed container until you need what's inside. Finish or properly discard unused medicines, because they go bad.

Do your homework when it comes to your medication. Ask your doctor or pharmacist or check the drug company's product information or website about the life of these medications. Some are still good long after the expiration dates.

PHARMACIES

One of my favorite places to shop is a pharmacy, because great deals happen all the time. Pharmacies always have coupons and run sales regularly, so you just can't lose.

I particularly like them for stocking up on first aid items. You can spend a ton of money purchasing an "official" first aid kit, or you can save money by making your own. What with coupons, reward points and sale items, I purchase store brand bandages, gauze, anti-bacterial cream and other things for just about nothing.

I make my own kit with these items. My first aid bag is a Blackhawk medic's bag that I was able to pick up brand new for a good price because it was being discontinued. I filled this bag with my items and now have a great first aid kit for less than half the cost—including the bag.

BIG-BOX AND DEPARTMENT STORES

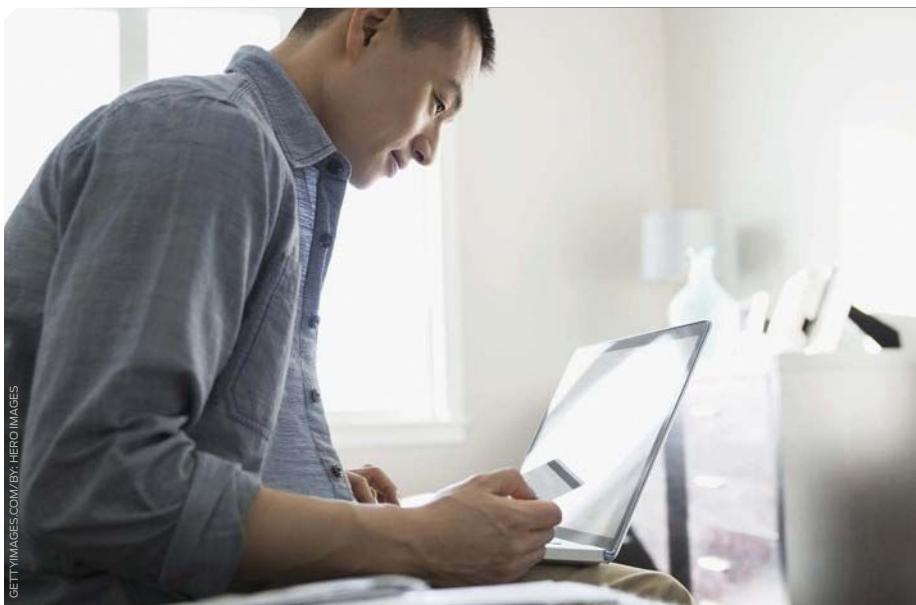
I know what you are thinking, but hear me out. Always keep your ears and eyes open. Sometimes, these stores do have good deals on some pretty good items. Some carry firearms and ammunition. Many times, the prices at these stores can be less than elsewhere.

Granted, the selection is not as good, but you just might be able to walk away with the gear you need at a very good price. Real

EXCLUSIVE SURVIVAL GUIDANCE!

**YOUR
TIME ARK SERVICE MODULES
HAVE RETURNED
FOR YOUR DUE SURVIVAL**

www.ATABASE.info



GETTY IMAGES.COM/BY: HERO IMAGES

survival means taking advantage of every opportunity, and this is a good time to practice that skill.

OUTDOOR STORES

Sometimes, you just have no other choice but to buy your items at the larger outdoor stores, but you can still stick to your budget by paying attention.

I buy ammunition whenever and wherever it goes on sale, including at those large outdoor stores. There are always flyers advertising sales. Sometimes, there are holiday specials that offer huge discounts for just one or two days. If you are willing to get up at the crack of dawn and perhaps stand in line during a snowstorm, the savings can be worth it. I know; I've done it.

ONLINE

Online shopping is becoming more popular every year. This has resulted in new



The Internet lets you compare products, prices and service without leaving home.

"THERE ARE WAYS TO GATHER THE GEAR YOU AND YOUR FAMILY WILL NEED WITHOUT DESTROYING YOUR BUDGET."

opportunities for finding the gear and supplies you need without having to leave the comfort of your home.

Many sites offer very competitive pricing, free shipping and other benefits. Maybe even better than choice and price is the fact that you can check product and seller reviews and steer clear of crummy products and bad customer service.

Once you've found some sources you trust, sign up for their e-mails and watch for deals on the products in your plan. Note that you'll probably be subjected to lots of offers from the time you start poking around a site until you finish your checkout process, but resist them if they don't help you complete your kit.

Below: A Blackhawk bag and store-bought components. You can pick up good bags at Army-Navy surplus stores.

Bottom, left: First aid items can often be picked up pretty cheaply at pharmacies, supermarkets and department stores.

Bottom, right: Ammo goes on sale. Watch for flyers, and stock up whenever you can.

Gathering your gear doesn't have to happen all in one day. When you are on a budget, you will get your gear (1.) one or two items at a time (2.) at the best price you can find and (3.) according to a plan you will stick to. Following these three steps and broadening your search options will save you a ton of money in the long run.

A store generally holds a sale to draw you in. The intent is for you to buy other things at full price.

If ammunition is on sale, go in, buy the ammo, and get out. Don't spend any time looking at full-price items, because you could be tempted to buy other things that will defeat your budget plan.

If you are a veteran or public safety professional, always ask if the store offers a courtesy discount. Many places do, but they don't advertise it well or might not apply it to sale items.

The bottom line here: You can save a great deal of money when outfitting yourself and your family. All it takes is a little common sense and self-control. Know what you want and how much you are willing to spend—and stick to it. **ASG**

HUNTERS SEE REALITY

Survival means being able to feed yourself and your family. If you can hunt, you can put meat on the table. That's simple truth.

Be equipped. Be ready.



See the whole LoneRock hunting
knife series at kershawnives.com

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#whatareyoucarrying? f t i p

GEAR

GUIDE





SANTA HITS THE FIREPLACE

GIFT IDEAS FOR THE PREPPERS ON YOUR "NICE" LIST

BY MICHAEL D'ANGONA

It's that time of the year again—time to check your holiday list and start your quest to seek out the perfect gifts for the survivalist, prepper, outdoorsman or adventurer who holds a special place in your heart. But before you head out into the often crazy and hectic malls or local outdoor superstore, take a look at all the goodies featured here for your ultimate shopping convenience. From the simple to the

complex, from the inexpensive to the radically unique and exotic, you will find something to fit everyone's particular taste.

Best of all, these gifts have a very useful and practical side. They can protect from the harsh elements, assist in fire making, give options for food and water and provide basic comforts of home—essentially all areas to keep loved ones alive and safe when man or Mother Nature creates harsh—and possibly life-or-death—conditions. **ASG**

GEAR

GUIDE

1

DIY Ranger Bead Pace Counter

Never get lost again out in the wild with this do-it-yourself pace-counter kit. The completed unit is similar to those used by U.S. Army Rangers and will aid you in proper land navigation. It is a simple and effective tool that counts your paces to more accurately measure distance traveled. Included instructions will help you construct the apparatus, while your hands-on approach will let you add a personal touch. This pace-counter is a great time-passer while sitting by the campfire.

Specifications

- Used by U.S. Army Rangers
- Included carabiner keeps it handy
- Valuable survival tool
- Supplementary video
- Step-by-step tying instructions

MSRP

\$9.99

URL

www.WazooSurvivalGear.com

2

Motoped

Best-case scenario: You have a Faraday cage surrounding this survival moped. Worst-case scenario: You don't—but that doesn't stop you from traveling!

This amazing survival bike is created to run on human pedal power. It was constructed for the creative survivalist and features areas to secure your most-needed bugout gear using bolt-on mounts, harnesses and a variety of fitments. If your bike's electronics survive the blast, use its gasoline engine and the two optional side-mounted fuel tanks to travel nearly 400 miles or more without stopping. The moped's jet-black paint job and thick, rugged tires ensure stealth and stability as you ride through the night unnoticed and on to your next destination.

Specifications

- Patented Jackshaft Pedal Drive System
- Aluminum rear rack
- Two 1-gallon storage tanks
- Durable, wide wheels
- Hydraulic disc brakes
- Speeds up to 24 mph

MSRP

Starting at \$3,199

URL

www.Motoped.com



3

Faraday Box

This is your ultimate defense against a HEMP strike. A Faraday box protects all your sensitive electronic equipment from being "fried" and rendered useless if such a malicious attack occurs near your location. Simply place all items within the box, close and seal the lid, and forget about it. When other people's electronics fail, you will be up and running as usual.

Specifications

- 3/16-inch aluminum plate construction
- Six stainless steel clamps
- Stainless steel handles
- Built-in ground lugs
- Casters for easy mobility
- Rugged powdercoat finish

MSRP

\$4,495

URL

www.MontieGear.com

4

Magpul Core/FR Breach Gloves

Although these gloves were designed exclusively for tactical applications, we found its tenacious protective qualities perfect for vehicle-recovery operations, as well. The Magpul Core FR Breach Gloves are the most protective hard-use gloves in the Magpul lineup. They incorporate hard-knuckle armor, digital-pattern-reinforced leather palms and touch-screen capability, along with the flame-resistant protection of both Nomex and Kevlar.

MSRP

\$120

URL

www.Magpul.com

5

Get Home Bag Special Edition V2

This midsized disaster-preparedness kit is fully loaded and ready to take on whatever disaster man or nature throws at you. The pack is pre-configured—meaning that all items are arranged, organized and stowed for your easy access in case of an emergency. The included items are free from their packaging and ready to conquer the crucial 72-hour survival window.

Specifications

- Pre-packed and ready to use
- Documentation in water-tight packaging
- Packed with quality SOG gear
- Store at home, in the office or vehicle

MSRP

\$469.99

URL

www.Echo-Sigma.com



3

5

4

GEAR

GUIDE

6

Mavericks Inflatable Tent

The Mavericks Inflatable Tent is a multipurpose shelter designed to withstand the incredible forces of nature, including wind speeds up to 112 mph. Its multichamber safety system maintains stability and its spacious geodesic shape. It's perfect for your base camp high in the mountains or as a group tent on the jungle or wilderness floor. The entire tent is pre-assembled and can be set up quickly and easily by one person. Five entrances and five windows provide superior access and ventilation.

Specifications

- Inside dimensions:
- Diameter: 13.4 feet
- Peak height: 6.6 feet
- Weight: 55 pounds
- One-pump system for total inflation
- Includes removable ground sheet

MSRP

\$6,500

URL

www.HeimPlanet.com

7

ESPRO/Travel Press

If you're coffee- and tea-dependent, you'll enjoy what this press is brewing. Shaped like a hot-water bottle, the Espro Travel Press's patented filter system has two filters, each nine to 12 times finer than those found in a typical French press. The result: all the flavor and none of the grit. The ESPRO Travel Press is designed so you can brew your favorite cup of coffee or tea on the go.

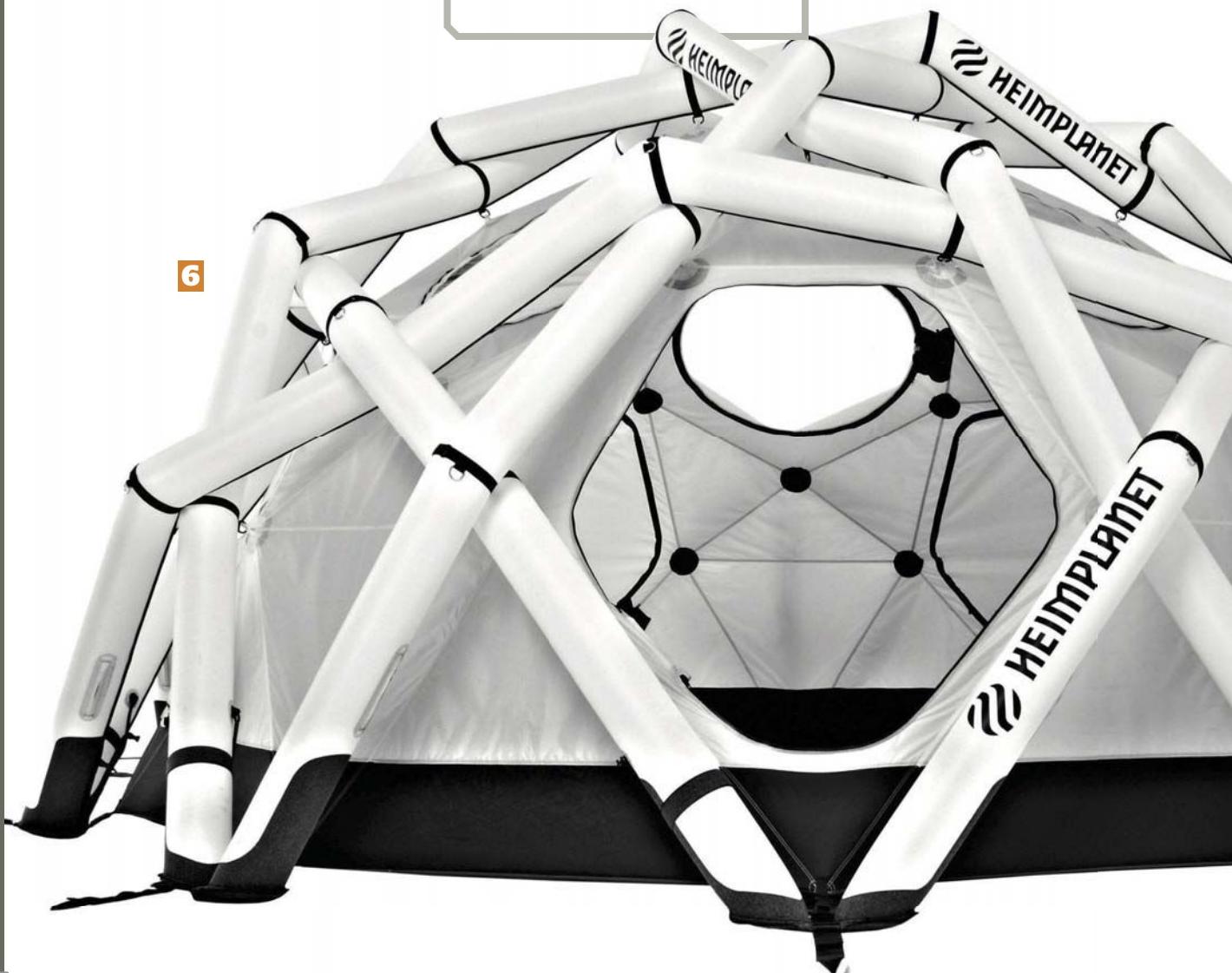
MSRP

\$50 (with filters)

URL

www.Espro.ca

6



8

Echo-Sigma Compact Survival Kit

This survival kit is small enough to store anywhere yet valuable enough to keep you alive when things go bad in our unpredictable world. It contains all the survival gear basics: a compass, whistle, water purification tablets, emergency blanket, duct tape, fire starter and more. Stash a kit at home, at the office, in your car or just about anywhere. Make sure you and your family are ready when disaster strikes.

Specifications

- Small and compact
- Provides the basic needs for survival
- Over a dozen useful items
- Durable carrying pouch

MSRP

\$49.99

URL

www.Echo-Sigma.com

9

Bushcraft Necklace

This fashionable leather necklace could be a lifesaver when things go bad. Its rich, mahogany-brown leather cord holds a valuable "flint-and-steel" pendant ready to go into action when a fire is essential. One size fits all and is fully adjustable via a classic mountaineering knot.

Specifications

- One size fits all
- Easy to use
- Reusable
- Leather is free of lead and other harmful chemicals

MSRP

\$20

URL

www.WazooSurvivalGear.com

10

Bad Monkey Paraknuckles

Inspired by brass knuckles, this tool is the perfect way to store your extra paracord, bank line or microcord. These Bad Monkey Paraknuckles are lightweight, extremely durable and can be clipped with a carabiner to the outside of a pack or to a belt loop. They are made from reinforced black plastic resin.

Specifications

- Highly durable
- Holds 25 feet of 2mm microcord
- Easy-to-unravel cordage
- Jet-black color

MSRP

\$10

URL

www.CreekStewart.com

**8****7****10**

GEAR

GUIDE

11

Medicinal Herb Garden Kit

Grow your own medicinal herbs and treat your minor ailments. This kit contains everything you need to start a mini medicinal herb garden, including a solar greenhouse, organic peat pellets, organic seeds and 24 empty tea bags. How-to-use herb cards give you specific uses for each herb. Herbs can be easily transplanted into an outside garden, keeping your "medicines" hidden in plain sight.

Specifications

- Includes seven medicinal herbs
- Grows indoors
- Organic seeds
- Complete instructions and informative herb cards included

MSRP

\$34.95

URL

www.GrowAndMake.com

12

Survival Seed Vault

Concerned about when you can no longer stroll down your local produce aisle for fresh vegetables and fruit? With the Survival Seed Vault, your worries are over. This "garden in a can" provides 20 varieties of hearty heirloom seeds that are perfect for starting and maintaining your own vegetable garden for years into the future. These carefully selected seeds are 100 percent non-GMO, open pollinated and placed in specially sealed packets that allow for long-term storage.

Specifications

- 20 heirloom varieties of popular vegetables and fruits
- Five-plus years of storage life
- No hybrids
- Hand inspected
- Survival seed-saving guide included

MSRP

\$29.95

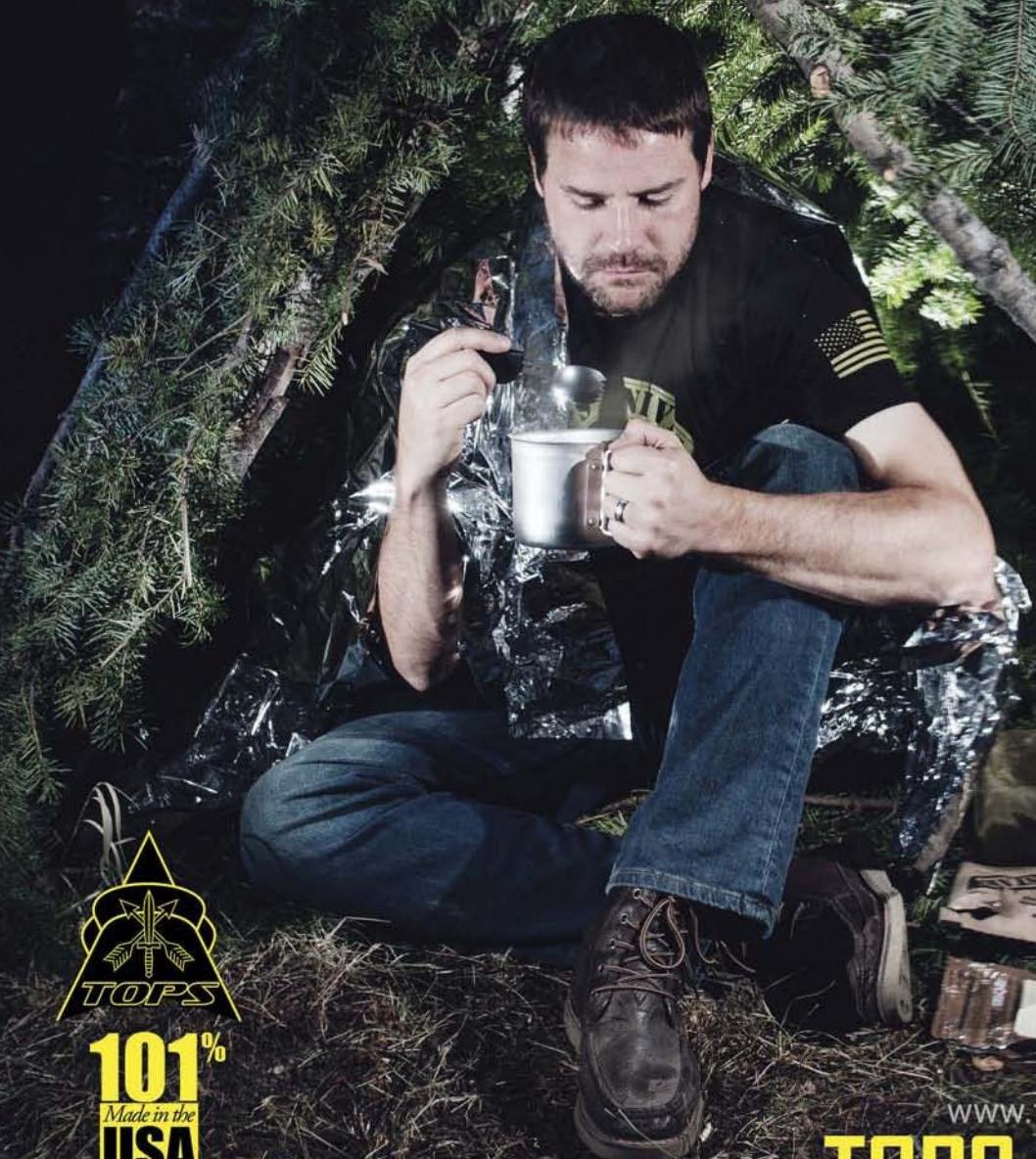
URL

www.MyPatriotSupply.com



F.O.R.K. IT

"Having a civilized utensil available when other comforts of home are long gone can be a big morale boost."



101%
*Made in the
USA*

www.topsknives.com

TOPS KNIVES

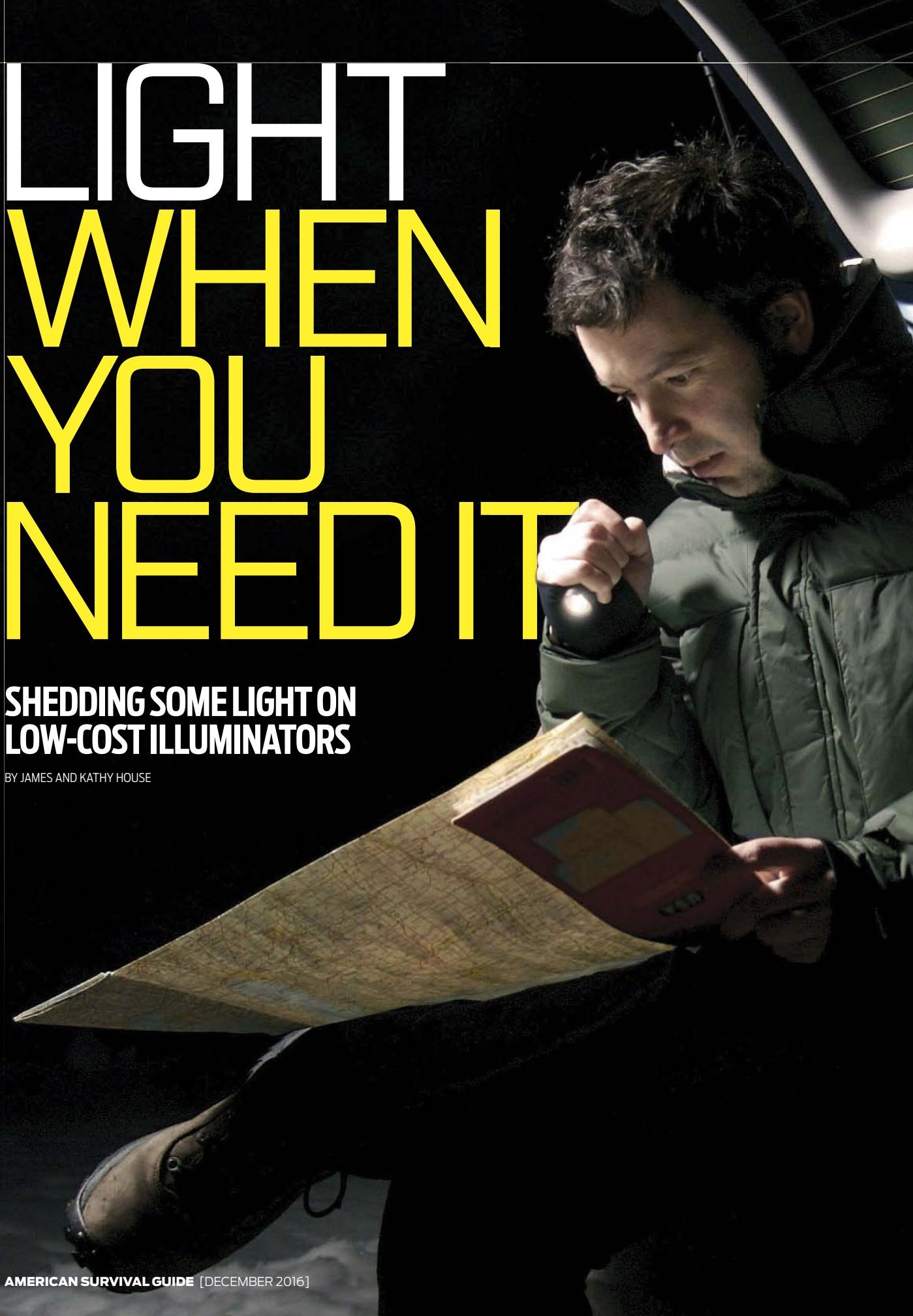
Ever been on a backpacking trip and forgotten your eating utensils? Not anymore. The F.O.R.K. It is a fixed-blade/spork combo that was designed for the minimalist backpacker, military on deployment, or bug-out-bags without a lot of weight or room available. The 1095 high carbon blade is designed to complete most small chores easily. The bottle opener comes in handy when drinking a fancy brew or imported soda, and having a civilized utensil available when other comforts of home are long gone can be a big morale boost. The Kydex neck sheath is small and lightweight giving access to the bottle opener without removing the knife and providing a safe handle for the spork.

LIGHT WHEN YOU NEED IT

**SHEDDING SOME LIGHT ON
LOW-COST ILLUMINATORS**

BY JAMES AND KATHY HOUSE

GETTYIMAGES.COM/BY: FERRANTRATE





"WHEN YOU NEED LIGHT BUT MUST AVOID THE WEIGHT, A SMALL FLASHLIGHT IS THE ANSWER."

Most people do not see well in the dark. It is difficult to determine which key is pointed at a lock or to collect firewood when there is no light. Consequently, artificial light must be provided in many situations and, when you're away from an electrical outlet, that means you need a portable light.

A large flashlight that produces 500 or more lumens will serve as a light source, but it could be a foot long and weigh a couple of pounds. When you need light but must avoid the weight, a small flashlight is the answer.

Many compact flashlights are wonderfully bright and lightweight, and they can be inexpensive, too. As you'll see with the following models—all of which can be found for less than \$20—good things do come in small packages.

► The light source most often found in good flashlights is a CREE LED.



► Many small flashlights are powered by three AAA batteries that are contained in a holder.



► Below: All the lights the authors tested provided plenty of light to see around a campsite.



FEATURES TO CONSIDER

When selecting a small flashlight for general use or for inclusion in a pack or bug-out bag, choosing from among the many available models could be overwhelming. However, weighing the value of some general features will help you find suitable options.

The first is the type of batteries required. Some of the powerful and expensive flashlights require batteries that are rather pricey. One such battery is the 3-volt CR123, which can cost from about \$2 to almost \$10 each. Although a flashlight that operates on two such batteries might perform well, the batteries might not be available at every outpost.

Our small flashlights operate on inexpensive and widely available AA or AAA batteries, which can be priced less than 40 cents each in bulk packs. In addition to the ubiquitous alkaline batteries, several types of rechargeable batteries are available that provide a very low cost per charge.

“... WITH A SWISS POCKET KNIFE, A ROLL OF DUCT TAPE AND A FLASHLIGHT, A LOT OF THINGS CAN GET FIXED.”



Another issue to remember is the construction of the flashlight. Although models with metal bodies might be more durable, those made from polymer are often more comfortable to hold, especially in cold weather. Also, flashlights with polymer bodies are safer when working in areas where contact with electrical equipment is possible.

In addition, the switch type and location are important. Most small flashlights have either a side-mounted switch near the head or a push-button switch in the tail of the light. Each type has advantages and disadvantages. For example, a light with a side-mounted switch placed in a tote bag with objects sitting on top of it could push the switch to the "on" position. This is less likely to happen if the light has a switch on its end cap.

Another important feature is the light's ability to be focused or spread to cover a larger area. Numerous focusing models are available, and they generally operate by turning the head or by sliding the head forward or backward. The latter type is more common.

When you need a dependable flashlight, you might not need a big one.

A small amount of light is generally all that's needed when you are working in close spaces. Therefore, a flashlight with multiple power levels might be a good choice. The lowest power level permits the light to operate several times longer than on the highest setting. This allows you to have light for a long time without having to carry a lot of extra batteries.

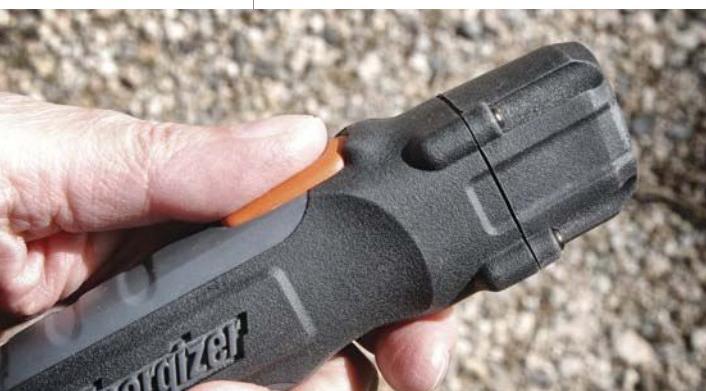
Finally, features such as a pocket clip and an attachment point for a lanyard, as well as water and impact resistance, might be important.

ENERGIZER HARD CASE PROFESSIONAL LED TASK LIGHT

An excellent example of small but capable flashlights is the Energizer Hard Case series. There are several products in this series. The Task Light model (TUF2AAPEH) uses two AA batteries to produce 250 lumens on high and 30 lumens on low. Run time is five hours on high and 30 hours on low.

► Featuring two power levels, rugged construction and a convenient thumb-operated switch, the Energizer Hard Case is an excellent light.

This flashlight is tested to withstand a 3-meter drop. Its switch is located on the top of the barrel. The first push turns the light on in the high-power mode; a second push switches it to the low-power mode. The durable, lightweight polymer body is 6.76 inches long and 1.74 inches in diameter and includes a lanyard hole. The Hard Case Task Light represents a good value.



SPECIFICATIONS	
► BATTERY TYPE:	AA (2)
► WEIGHT W/BATTERY (ounces):	5.3
► LENGTH (inches):	6.76
► OUTPUT (lumens):	30/250
► RUN TIME (hours):	50/5
► MSRP:	\$15
► SOURCE:	www.Energizer.com



► Despite its diminutive size and operation on one AA battery, this Cabela's model is astonishingly bright.

CABELA'S KEYCHAIN LIGHT

One of the smallest of our tiny lights is the Cabela's Model IK-532237 keychain flashlight. This 4.5-inch-long light is made of aluminum. It has a textured grip and solid feel, despite its size and scant, 2.2-ounce weight.

Rotating the head clockwise turns on the light, and the tail cap is outfitted with a small ring for attaching the included lanyard or to hook it to your key ring. This light is rated at 120 lumens, with a battery life of three hours on one included AA battery. The beam distance is 100 meters for this miniature marvel. This light is available in four colors.



SPECIFICATIONS	
► BATTERY TYPE:	AA (1)
► WEIGHT W/BATTERY (ounces):	2.2
► LENGTH (inches):	4.5
► OUTPUT (lumens):	120
► RUN TIME (hours):	3
► MSRP:	\$19.99
► SOURCE:	www.Cabelas.com

RAYOVAC VIRTUALLY INDESTRUCTIBLE LED 3AAA FLASHLIGHT

Rayovac flashlights have been available for about 110 years and under the Rayovac name since 1930. A considerable number of the old Rayovac Sportsman models are in our collection.

However, today's Rayovac models bear little resemblance to those collectibles. One of the newest models is the OT3AAA-BC, which operates on three included AAA batteries. It features a heavy aluminum body whose head and tail are protected by a rubber overmolding.

There are two power levels: The higher, 250-lumen setting has a three-hour run time, and the 20-lumen Energy Saver mode has a 39-hour run time. This rugged flashlight can survive a drop of 30 feet, and it has IPX4 water-resistance protection, as well.

The pushbutton switch is located on the end cap. One push activates the high-power beam, and a second push steps the light down to a low-power beam. The beam is not quite a spotlight, but it is focused to give a very bright area of useful illumination.

► If a slightly larger and heavier light can be tolerated, the Rayovac OT3AAA-BC is a superb light.



SPECIFICATIONS

- **BATTERY TYPE:** AAA (3)
- **WEIGHT W/BATTERY (ounces):** 5.9
- **LENGTH (inches):** 5.3
- **OUTPUT (lumens):** 20/250
- **RUN TIME (hours):** 39/3
- **MSRP:** \$15
- **SOURCE:** www.Rayovac.com

COAST HX5

SPECIFICATIONS

- **BATTERY TYPE:** AA (1)
- **WEIGHT W/BATTERY (ounces):** 2.7
- **LENGTH (inches):** 4.3
- **OUTPUT (lumens):** 130
- **RUN TIME (hours):** 3.75
- **MSRP:** \$20
- **SOURCE:** www.CoastPortland.com



► Operating on one AA battery, the Coast HX5 is bright, and it also has a focusing beam.

The Coast name appears on many types of tools and hardware, including flashlights. The Coast HX5 is so small that it is powered by a single AA battery—yet, it produces a respectable 130 lumens. It's also compatible with rechargeable NiMH and lithium 14500 batteries (not included) for improved performance. The Coast measures 4.3 inches long and has an 0.8-inch diameter. The pushbutton switch located in the end cap activates the light.

Despite its small size, the Coast HX5 is very sturdy. It is made of aluminum with knurling and a durable black finish. It also has a two-way clip for securing it in a pocket or to the bill of a hat.

A useful feature of the HX5 is that its beam can be changed from "spot" to "flood" by sliding the head of the flashlight. However, this light has only one power setting, for which the run time is 3.75 hours. In terms of quality, appearance and power, it is hard to find fault with this flashlight.

OZARK TRAIL FOCUSING 200 LUMEN FLASHLIGHT

➤ Although it is inexpensive, this Ozark Trail flashlight features a focusing beam and three power modes.

With thousands of stores, virtually all of which sell outdoor and camping equipment, Walmart must be considered a significant source for such items. Ozark Trail is the Walmart private label under which many of the items are sold, including flashlights.

This Ozark Trail model has a focusing beam that operates on three included AAA batteries. It produces either 200 lumens on high power or 18 lumens on low power. Its run times are five and 28 hours, respectively.

The Ozark Trail features a flashing mode. Pushing the tail-mounted switch once turns the light on in the "high" mode. Pressing it again turns the light off, and the next push turns the light on in the low-power mode.

A desirable feature of this Ozark Trail light is that it can be focused to give a narrow beam or a wide-angle floodlight. The beam size is changed by sliding the head forward for "spot" or to the rear for "flood." With a 5-inch body made of aluminum, the Ozark Trail has a hefty, sturdy feel. The focusing mechanism works well, and even on low setting it is amazing how bright 18 lumens is.

SPECIFICATIONS

- **BATTERY TYPE:** 3AAA
- **WEIGHT W/BATTERY (ounces):** 5.1
- **LENGTH (inches):** 5.0
- **OUTPUT (lumens):** 18/200
- **RUN TIME (hours):** 28/5
- **MSRP:** \$10
- **SOURCE:** www.Walmart.com



5.11 TACTICAL TPT EDC FLASHLIGHT



5.11's TPT EDC is constructed with a body of PC/ABS polymer that is very tough and still lightweight. It uses a Cree LED and two included side-by-side AAA batteries to produce 91 lumens with a run time of 4.75 hours. Operation is simple via a switch mounted on the shoulder below the anodized aluminum bezel. The TPT EDC withstands the 2-meter drop test and is weather-resistant, according to the IPX4 standard.

➤ The TPT EDC has a unique body shape. Its flat sides keep it from rolling when you set it down, allowing hands-free illumination.

To keep it always close at hand, you have the option of using the detachable spring steel pocket clip or attaching it to your keyring. This flashlight offers a lot of light in a small space for a low price.

SPECIFICATIONS

- **BATTERY TYPE:** AAA (2)
- **WEIGHT W/BATTERY (ounces):** 3.2
- **LENGTH (inches):** 2.8
- **OUTPUT (lumens):** 91
- **RUN TIME (hours):** 4.75
- **MSRP:** \$19.99
- **SOURCE:** www.511Tactical.com

PRINCETON TEC AMP 1L FLASHLIGHT

► If you need superior water resistance, the 100 meter-rated Princeton Tec Amp 1L is the way to go.

The compact Amp 1L is just 3.85 inches long and weighs a mere 2 ounces with the two included AAA batteries. This light provides 90 lumens of light and has a run time of 72 hours to give you a lot of light in a small package. Its water-resistant construction is good to 100 meters, making it a suitable backup light for divers.

To keep it handy, the Amp 1L has a carabiner loop molded into the polymer body so it can be hung on a gear or belt loop. The included snap-on translucent cone diffuses the light and lets you use it for marking your location or for wide area illumination. When you get some down time, use the bottle opener built into the handle to access a refreshing libation.



SPECIFICATIONS

- **BATTERY TYPE:** AAA (2)
- **WEIGHT W/BATTERY (ounces):** 2.0
- **LENGTH (inches):** 3.85
- **OUTPUT (lumens):** 90
- **RUN TIME (hours):** 140
- **MSRP:** \$14.99
- **SOURCE:** www.PrincetonTec.com

“A SMALL AMOUNT OF LIGHT IS GENERALLY ALL THAT’S NEEDED WHEN YOU ARE WORKING IN CLOSE SPACES.”

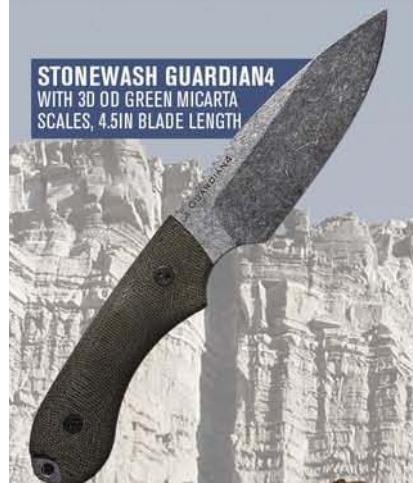
A long-time friend has a saying: “With a Swiss pocket knife, a roll of duct tape and a flashlight, a lot of things can get fixed.” Based on our experience with numerous small flashlights, it can be concluded that a flashlight need not be a large, heavy one. These small lights give impressive performances and are easily portable.

Never leave home without one. **ASG**

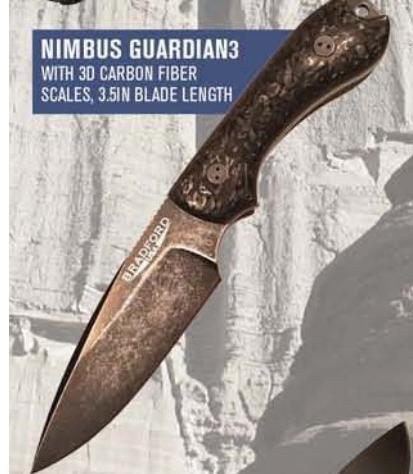
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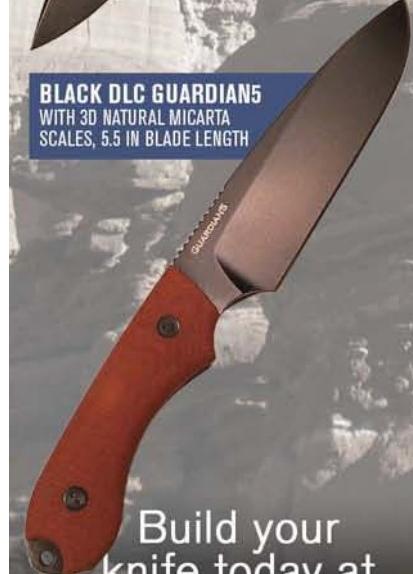
STONEWASH GUARDIAN4
WITH 3D OD GREEN MICARTA
SCALES, 4.5IN BLADE LENGTH



NIMBUS GUARDIAN3
WITH 3D CARBON FIBER
SCALES, 3.5IN BLADE LENGTH



BLACK DLC GUARDIAN5
WITH 3D NATURAL MICARTA
SCALES, 5.5 IN BLADE LENGTH



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GEAR GUIDE

DINING OUT?

ENJOY HOME-COOKED FOOD WITH A SURVIVAL STOVE AND MESS KIT WHEN FAR FROM HOME.

BY MICHAEL D'ANGONA

No matter where you find yourself in nature or in the urban concrete jungle, one thing is certain: You have to eat. Perhaps not on day one, day two or even weeks in, but eventually, hunger will get the best of you, and food will become a definite, must-have necessity.

Freshly killed game, most varieties of fish (and any food source that appears "questionable") must be cooked, and nothing works better while under emergency conditions than a portable survival stove. There are many stove choices, and they vary in size, fuel sources and ease of operation. There is definitely one out

there that fits your particular needs.

Once your meal is cooked, it's time to eat. A survival mess kit will make your meal much easier to handle than doing everything by hand or on a spit or skewer. Plates, bowls and utensils, specifically designed to be lightweight and compact for packs and bags, are essential when space is a commodity you just don't have.

Easy-to-clean and durable construction is what you need to look for in a mess kit, and what is currently available on the market won't disappoint.

A survival stove and mess kit—two survival items that will add some comfort and home-style cooking to your faraway, outdoors adventure. **ASG**





GEAR

GUIDE



Minuteman Rocket Stove

Overview

The power of intense, high-heat cooking using only sticks and twigs found in nature's backyard! The Minuteman Rocket Stove requires very little fuel—only a tenth of what an open fire needs—yet, it produces enough heat to allow easy cooking with a cast-iron or large Dutch pot. It's constructed of double-walled, 1/8-inch steel with ceramic fiber insulation, making the exterior safe to set on most surfaces without harm. When you are finished cooking, just pour out the ashes, attach the rubber-sealed lid, and you're ready to travel! The Minuteman is built tough and is guaranteed to last for years to come.

Specifications

- Fast and easy to light
- Very little smoke
- Reaches temperatures in excess of 1,300 degrees (F)
- Rubber-sealed storage lid
- Easy-carrying handle

MSRP

\$169.95

URL

www.MinuteManStove.com



G.I.-Style Mess Kit

Overview

You can't beat a classic. This G.I.-style mess kit has been used for generations by men and women who are "out in the field" defending our country. Now, you too, can enjoy its simple, yet practical, design while out camping or during a life-and-death survival situation. This two-part set includes a cooking pan with hinged handle that won't get hot while cooking and a two-section eating tray that doubles as the lid. Both halves nest easily and are kept together when the handle is folded over the tray. No matter where you are or what you need to cook, this trusted outdoor staple won't let you down. Choose from aluminum or stainless steel. (The fork, knife and spoon are not included in the kit.)

Specifications

- Simple, proven design
- Durable construction
- Available in aluminum or stainless steel

MSRP

Starting at \$11.95

URL

www.VanguardSurvival.com

Kindle-Cook Flameless Heating System

Overview

This “stove” is a great backup item when a traditional survival stove is unavailable or unable to be used due to safety concerns. Using only the ingenious Max Heat Pack and a small amount of water, this unit heats up to nearly 210 degrees (F)—more than enough to heat your MRE meal, your dehydrated survival foods or hot beverage of choice. This amazing alternative to a fire-producing stove is perfect and safe to use inside your tent or temporary shelter.

The kit contains a stainless steel bowl, measuring bottle, plastic PP container, neoprene sleeve, airtight lid and two Max Packs to start you off. This item is a must-have for your bug-out bag or emergency supply preparation plan.

Specifications

- No ignition required
- Simple to use
- Indoor and outdoor use
- Great to heat MRE meals
- Three- to five-year shelf life
- Eco-friendly

MSRP

\$37.95

URL

www.SurvivalMetrics.com



Biolite Campstove

Overview

High tech and efficiency combine to bring you the ultimate tool for outdoor survival. This camp stove burns any wood found outdoors to cook your meal or boil water within minutes. Its internal fan and gas jets allow air to circulate into the fire to produce the hottest and most hyper-efficient flames possible. Best of all, it converts heat energy to electricity, allowing you to charge your cell phone or other small USB devices. It's easy to set up, is cool to the touch and can get you cooking within minutes. This stove includes an internal fan for improved combustion.

Specifications

- Lightweight aluminum legs
- Virtually smokeless
- 2-watt USB port for small USB devices
- FlexLight included
- Scalloped pot stand

MSRP

\$129.95

URL

www.BioLiteEnergy.com



GEAR

GUIDE



Folding Firebox Nano Ultralight Stove

Overview

This amazing survival stove burns a variety of different fuels, sets up in seconds, won't warp under extreme heat and folds down to fit into your shirt pocket. It is a must-have item for every prepper or survivalist. This simple stove can be a lifesaver while under emergency or even life-or-death conditions. Boil water quickly using various fuels, including wood, gas, canned cooking fuel or flammable biomass.

At only 6 ounces and 3 inches wide, the Nano is one of the smallest survival stoves on the market today. It folds down to an incredibly thin 1/4 inch in thickness. Built tough with quality materials, the Nano will last for years under harsh outdoor conditions.

Specifications

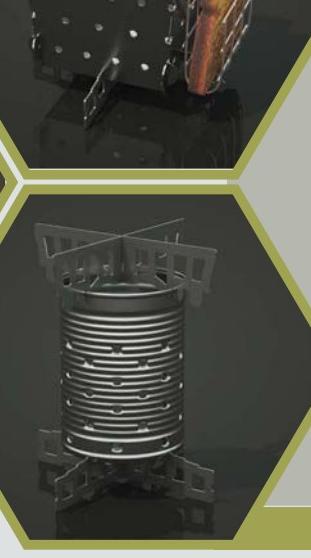
- Multifuel versatility
- Crossfeed fuel-delivery system
- Adjusts to fit various sizes of pans or cups
- Extremely compact
- No assembly needed

MSRP

\$39.99

URL

www.FireBoxStove.com



Siege Stoves

Overview

Siege Stoves offer extreme versatility, durability and portability, all without putting a strain on your wallet. The components created over many years of careful planning and testing were designed to set up in a snap and perform without failure under harsh outdoor conditions.

Customize its setup by choosing your specific cross members, can size and optional add-on accessories. Grilling fish, boiling water and toasting bread are all options with Siege Stoves. These stoves are perfect for campers, survivalists, backpackers, Boy or Girl Scouts, relief agencies—just about anyone. Cross members and the folding stove are available in steel or extra-strong titanium. You supply the can.

Specifications

- Take-apart design
- Quick assembly
- Economical
- Customizable features
- Durable under outdoor conditions

MSRP

Starting at \$22

URL

www.SiegeStoves.com

Economy Scout Stove

Overview

Packing a bug-out bag? If so, this stove is an absolute must. The Scout Stove is so compact that it fits entirely into its included cooking pot. To assemble it, just stack all the durable, stainless steel components, and you're ready to go. The unit burns flammable biomass, so finding fuel should never be a problem. Use twigs, packed hardwood or cooking pellets for varied burn times to fit your cooking needs.

A super-convenient black nylon carrying bag is included, and an optional accessory pack is available separately.

Specifications

- Lightweight compact design
- Operates on twigs or other biomass
- Stainless steel construction
- All components store inside cooking pot
- Fits easily into a bug-out bag

MSRP

\$52.95

URL

www.SilverFire.us



Survivor Rocket Stove

Overview

This second-generation rocket stove takes outdoor cooking to an entirely new level. Using a state-of-the-art, clean-cook design, the Survivor Rocket Stove uses minimal fuel, produces very little smoke and less char, and cooks your food or boils water in record time. It uses both primary and secondary combustion that maximizes efficiency and leaves you with only fine ash and a very clean burn.

The unit is constructed of high-quality stainless steel and features the thickest, most durable cast iron stove top available on the market today. Five supports offer supreme stability, keeping your cookware firmly in place. Quality, reliability and years of use make this stove one of your most valuable pieces of outdoor survival gear.

Specifications

- Solid stainless steel fuel shelf
- Uses minimal fuel
- Low emissions
- Highly-efficient design
- Combines both primary and secondary combustion
- Uses twigs and biomass as fuel

MSRP

\$179.95

URL

www.SilverFire.us



GEAR GUIDE



N.A.T.O. Chow Set

Overview

Even the simplest conveniences are missed when you are under survival conditions. But with this chow kit, you can enjoy the luxury of real steel utensils when it's time to enjoy a much-deserved meal. Included in this compact set are a sharp knife, fork, spoon, bottle/can opener and integrated screwdriver and wrench—useful when simple tools are needed in a pinch. All items lock into a plastic housing that fits snuggly in a rugged olive drab nylon sheath. Carry it on your belt for easy access when the dinner bell rings. This is a simple luxury you shouldn't go without.

Specifications

- Stainless steel utensils
- Integrated wrench and screwdriver
- Multifunction design
- Compact, easy to store
- Nylon sheath included

MSRP

\$9.99

URL

www.VanguardSurvival.com



Five-Piece Stainless Steel Mess Kit

Overview

Don't forget your simple essentials when camping or packing for an unexpected emergency. This mess kit complements your food and fire gear and allows you to cook and enjoy a meal easily. Included in this kit are a frying pan with handle, sauce or soup pan, splatter-proof lid, serving plate and plastic cup. Best of all, everything packs away into one, easy-to-store unit. Constructed of durable stainless steel, these components won't alter food taste and will last for years. This kit should be a staple of your bug-out bag or camping gear.

Specifications

- Stainless steel construction
- Convenient pack-away design
- Stay-cool handle included

MSRP

\$22.99

URL

www.Rothco.com

Single-Burner Folding Stove

Overview

This simple, single-burner stove uses easy-to-find canned cooking fuel. Just fold out the supporting frame, light up a can of fuel, and you're ready to cook. It couldn't be easier. The unit is constructed of durable metal painted in bright orange, making it almost impossible to lose or misplace around your campsite. It features a fold-out assembly that reduces precious storage space and makes carrying it in your pack easy and worry free.

This portable stove is perfect for emergency blackouts, weekend camping trips or a backyard sleepover when simple, one-burner cooking is all you need.

Specifications

- Simple, fold-up storage
- Uses canned cooking fuel (not included)
- Easy-to-locate bright-orange color
- Highly durable construction

MSRP

\$11.99

URL

www.Rothco.com



Hexagon Wood Stove

Overview

This simple-to-assemble, portable survival stove transforms from flat, folded metal to a fully functioning wood-burning stove in mere seconds. Use twigs, sticks or any wood chunks or pellets to keep your small, personal fire burning steadily while your tasty meal cooks thoroughly.

When not in use, the Hexagon wood stove folds flat, stores safely within its included hook-and-loop pouch and packs slimly in your backpack, emergency bag or even your jacket pocket. It is available in stainless steel or ultralight titanium.

Specifications

- Folds flat to approximately 5 x 5 x .3 inches
- Accommodates up to 1.5-liter pots
- Hinged fuel/damper door
- Nylon carrying pouch
- Available in stainless steel or titanium

MSRP

Starting at \$39.95

URL

www.VargoOutdoors.com



RETHINK, RECYCLE, REPURPOSE

THINK BEFORE YOU TOSS THESE ITEMS INTO THE TRASH—THEY COULD SAVE YOUR LIFE.

BY ROBERT KIM

Imagine not being able to visit your favorite store—or any place you can buy survival items. No worries. Fortunately, you have access to some of the best materials around to make your own survival gear ... and they're right in your trashcan.

No matter what situation you're trying to survive, knowing which common household items you can repurpose can be your key to staying alive. In some cases, it might make sense to consider the secondary use of a product's packaging when you add to your gear and food stores.

Here are 10 items you should avoid throwing in the trash and should, instead, keep in your survival kit.

DON'T DUCK FROM DUCT TAPE

You might think duct tape is useless after it loses its sticky qualities, but you'd be wrong.

"You can use it as an effective fire starter, because it burns even when wet," says Andrew Herrington of BigPig Outdoors Smoky Mountain Bushcraft & Survival School.



◀ A repurposed water bottle is perfect for collecting water in the wilderness. It is even useful for boiling water, because the water keeps the plastic from melting in an open flame.

Herrington first discovered duct tape's latent usefulness from an old hunting partner who worked in Alaska. "He worked at a fish weir and couldn't figure out why they were going through so much duct tape. He visited his workers' camp (they all were Alaskan natives) and found out it was their favorite fire starter. They were going through a roll per week."

TWINE, BE MINE

Hang on to anything you can find that can serve as a cord, twine or other item you can tie, lash or bind things with. This includes bread bag ties, shoelaces and even ripped cloth.

You can use the cording as a way to attach pieces of brush to create a shelter, make a fishing pole or tie branches together into a trap. You can even tie items into a bundle to make a makeshift carrying case for firewood, gear or to carry home the big game you've hunted. You won't realize how important this asset is until you don't have it handy.

Right: Newspaper is a fantastic fire starter that can be folded into a pocket-sized resource.

Below, top: Dried-out duct tape makes a great fire starter.

Below, middle: Your old newspapers can have second lives as useful survival tools.

Below, bottom: Foil can be used instead of pans for cooking over a campfire.



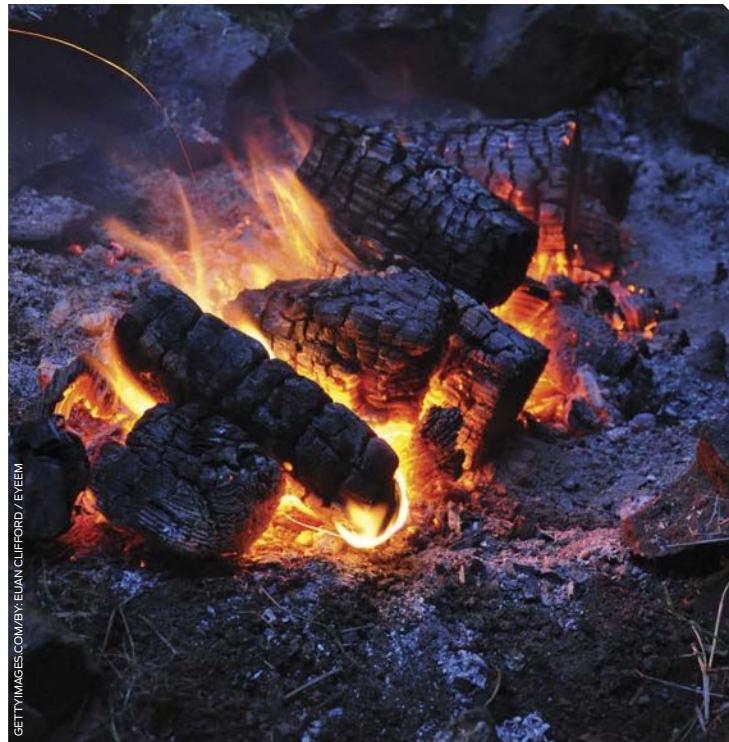
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GETTY IMAGES/GRANU/BUCARUSON/PETER



GETTY IMAGES/COMBY/EUAN CLIFFORD/EYEEM

EVEN A TRASH BAG IS FAIR GAME

There are a number of uses for a simple plastic trash bag, says expert Chris Noble, of Master Woodsman and the Woodsmoke Camping Company.

A plastic trash bag is compact and can be used as a shelter, rain gear or as a container for water or a dry bag, among other uses. Small plastic shopping bags can help you carry water or kindling from one spot to the next or be used as gear organizers. They also make great ground protectors for under your sleep sack.

Noble carries at least two 55-gallon drum liners with him at all times because of their low cost, light weight and small size when folded.

REPURPOSED MINT CONTAINERS

Almost everyone loves breath mints, and many brands sell their mints in a metal tin. Instead of throwing your next mint tin into the trash bin, consider using it to create a pocket-sized medical, fishing or repair kit.

You'll have plenty of room for bandages, ointment, tape and gauze; fishing line, lures and sinkers; or needles, thread, buttons and other fix-it bits. Plus, it closes and seals well and fits right into your pocket.

Another use is as a daytime signal device if you use the shiny inside of the open lid to reflect sunlight to attract a rescuer's attention.

DISASSEMBLE YOUR BIKE TIRES

Most people only think about using a bicycle for getting from point A to point B, but there are some parts of a bike that can be very useful.

For example, the humble bicycle tire inner tube can be packed conveniently, because it's easily folded up when deflated. When you need it the most, it can be used as a container to transport water, provide positive buoyancy when crossing open water or used as a tourniquet if you're injured.

The tube can be sliced into narrow or wide pieces to make rubber bands and gear-keepers, lash small sticks or poles together, or link them together to make custom-length bungees. In the end, you can also burn it in the fire to make smoke signals, if necessary.

SODA BOTTLES QUENCH MORE THAN THIRST

After you empty a soda bottle, don't trash it. You can use it for drinking, collecting water and even as a shovel (if you cut off the top). It can also have other uses you



GETTY IMAGES.COM/BY NICOLA TREE

"HANG ON TO ANYTHING YOU CAN FIND THAT CAN SERVE AS A CORD, TWINE OR OTHER ITEM YOU CAN TIE, LASH OR BIND THINGS WITH."

might never have considered: Bottles with screw caps are particularly useful for keeping small items dry and organizing little parts and tools.

"In my daily hunting pack, I can only think of one recycled item," says Herrington. "It is a soda bottle in which I keep my syringes and tubes to take blood samples after I shoot a wild hog."

NEVER TOSS THAT NEWSPAPER

It seems as if very few people have stacks of old newspapers piled up for recycling, as most of us did only a few short years ago. But you probably do have enough to store some in your survival kit.

And you don't need a lot. Newspaper can be used as a fire starter, insulation in your clothing or as a ground covering, Noble suggests.

You can even use the newspaper as a ground signal. "The white of a newspaper will offer a stark contrast in most environments devoid of snow. A large X, preferably 20 feet or larger, can be quickly laid out and weighted down with rocks, sticks and/or dirt to signal for help," he says.

The inks used today are not compatible with using newspapers in contact with food or for personal hygiene, but the paper is a great way to protect sensitive devices from impact.

◀ *Left:* Twine makes a decent fishing line when you need to secure nourishment.

◀ *Below:* Once you use your twine to catch fish, you'll have a handy way to store them away from the reach of wild animals.

FOILED AGAIN

Aluminum foil can be found on numerous wrappers and containers and isn't just for wrapping up sandwiches before you head out on a hunt. It's an amazingly versatile tool for survival situations.

In small quantities, it's light and can be folded or rolled and tucked away in a pack or pocket. And don't forget that the shiny side will make a serviceable rescue mirror.



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GETTY IMAGES.COM/BY VISTIR/BRITAIN/DAVID SELLMAN



GETTY IMAGES.COM/BY KLAUS VIDFELT

◀ *Above:* Twine can be used to reinforce your shelter, whether you carry a tent or make one from available resources.

◀ *Left:* A simple length of twine can hold up a shelter or even bind a tourniquet.



GETTYIMAGES.COM/BY/ADAM KUYLENSTIERN / EYEM



► Above: The everyday plastic garbage bag is useful as a rain poncho or ground covering when you sleep.



GETTYIMAGES.COM/BY/JENNIFER GONZALEZ / EYEM

◀ Above: Tire tubes are just the beginning of what you can salvage from a derelict bicycle.

◀ Left: After you've used up the mints, keep the tin box to store some first aid items in your pocket.

► Below: A beverage can's sharp edges make it the perfect source for makeshift cutting tools.

"A METAL CAN WILL LIFT YOU OUT OF THE STONE AGE AND PROVIDE THE POTENTIAL TO BUILD USEFUL TOOLS."



GETTYIMAGES.COM/BY/THOMAS M SCHIER / EYEM

Use it to cook in, as a windscreens for your stove or to start a fire. If you have a battery, which most people do, you can use pieces of foil separately on the negative and positive ends of the battery and then create a spark when the pieces of foil come together. You can also lay a piece of foil on wet ground to ensure your tinder is able to burn.

BIVY PADS—LOTS OF USES

If you've got a bivy pad you place under your sleeping bag, you can reuse it even after it starts to fall apart. Herrington points out that these lightweight pads are great for a multitude of uses.

"I sit on my bivy pad while cooking my lunch and use it for unexpected overnights. In addition, these can be used as makeshift splints due to their padding and strong structure," he adds.

Whether yours is inflatable or closed-cell foam, you can retask this piece of kit, in whole or in part, to add some comfort, weather protection or convenience to your situation long after its normal service life has expired.



GETTY IMAGES.COM/BY: BOSTON GLOBE



GETTY IMAGES.COM/BY: JORDAN SIEMENS

➤ *Above, left:* An old bivy pad can be used as a splint, because it usually has the right balance of rigidity and flexibility.

➤ *Above, right:* While bivy pads are great for sleep, worn-out pads can be used for first aid and other purposes.

TIN CANS ARE GOLD

Surely you remember the old cowboy movies in which people used to cook directly in a tin can ... but that's not the only thing you can do with these handy items.

Anyone who has ever cut a finger on a tin can knows how sharp it can be. You can use this to your advantage. If you have a knife, you can cut tin cans into myriad shapes, including a fishing hook, arrowhead or even a plain metal disk to reflect the sun and signal for help. A metal can will lift you out of the Stone Age and provide the potential to build useful tools.

You'll never be able to anticipate all the situations that could leave you stranded and struggling to survive in the wild. But you can prepare for the unexpected by learning how to use these everyday items that could help you survive until you get to safety. **ASG**

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BOMB-PROOF HANDLE. BECAUSE THERE IS**

**NO SUCH THING
AS OVERKILL.**

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**RELY
ON YOU**

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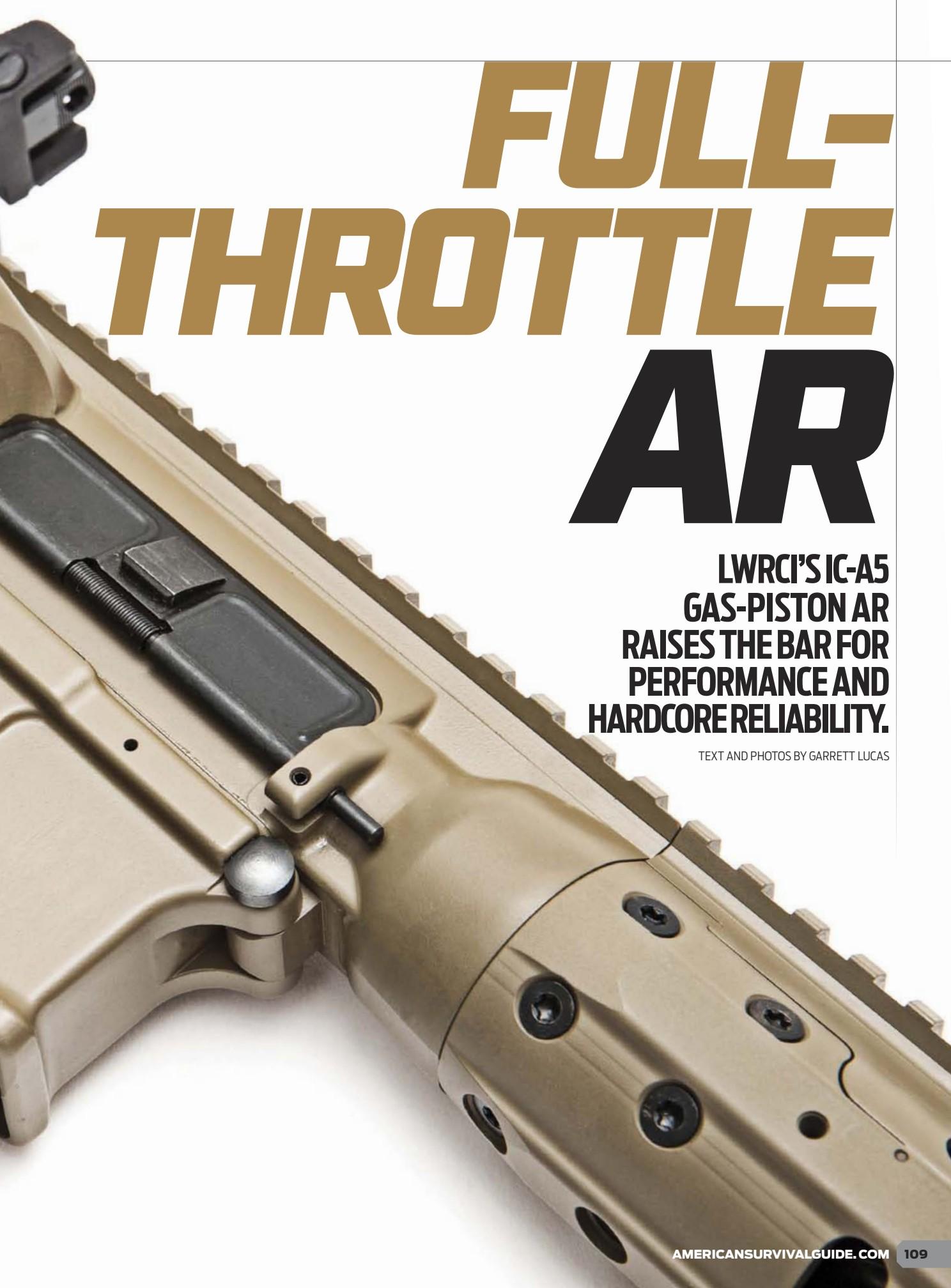
THE SCHRADE SURVIVAL HATCHET. Cuts any challenge down to size, with a titanium-coated blade seated in a nearly indestructible handle, plus integrated ferro rod fire starter.



We are living in strange times. Our neighborhoods and city streets seem to be plagued with violence, even though the overall crime rate has been coming down over the past 20 years.

The media coverage of different protest movements and the live feeds of officers being gunned down have everyone on edge this year. Add the fact that this is an election year—with two controversial candidates—and just about anything can happen.

With recent renewed strong calls for gun control, it makes sense to take inventory of what firearms we have at home to ensure they're the ones we want or need before a calamity occurs. Those were some of the thoughts that passed through my



FULL- THROTTLE AR

LWRCI'S IC-A5
GAS-PISTON AR
RAISES THE BAR FOR
PERFORMANCE AND
HARDCORE RELIABILITY.

TEXT AND PHOTOS BY GARRETT LUCAS

“... I WOULDN’T HESITATE TO SELECT THE IC-A5 AS THE RIFLE OF CHOICE TO MAKE MY STAND.”

SPECIFICATIONS

IC-A5

- CHAMBERING: 5.56 NATO
- CAPACITY: 30-round Magpul magazine (one)
- OVERALL LENGTH: 35.25 inches
- BARREL LENGTH: 16.1 inches
- WEIGHT: 7.3 pounds
- SIGHTS: LWRCI Skirmish Backup Iron Sights
- FINISH: Cerakote
- GRIP: Magpul MOE
- FRAME MATERIAL: Alloy
- STOCK: LWRCI Compact Buttstock
- FOREND: Alloy
- MSRP: \$2,804



➤ The lower half of the forend rail is attached to the receiver via eight screws, providing the foundation for a shrouded, free-floating barrel.

mind as I inspected and tested the new LWRC International IC-A5 for this review.

Politicians and the press have maligned the AR-15-style rifle in the past year more than any other year I can remember. It's definitely number one on the list for gun-control fanatics to try to ban if they have a chance. That's why I'm particularly interested in looking at some of the top models on the market right now, including the IC-A5.

DIFFERENT STROKES

The LWRCI IC-A5 not only embodies the classic look, feel and modularity of the typical AR-15 rifle, it raises the bar significantly in regard to making a great rifle that much better. For one, the IC-A5 is driven by LWRCI's patented self-regulating, short-stroke piston system, rather than by a direct-impingement system that most AR rifles on the market use.

Piston-design ARs are quickly finding favor with the general public as real-world operators in the different military branches take advantage of the more-advanced platforms on the battlefield.

The IC-A5, like other piston-driven ARs, does not drive hot gasses and fouling back into the receiver and bolt group. This results in a much cleaner weapon after firing. All things being equal, a cleaner weapon typically

means a much more reliable weapon—and reliable weapons save lives.

I have a couple of AR-15s right now. They are garden variety models you can find on the shelf for about \$750 to \$800, and I've added a few things (such as rails, grips, optics, etc.). They are both extremely fun to shoot and pretty accurate, but I've always questioned their absolute durability if it came time to put them to serious use defending my life or the lives of those around me. The scenario I envision is not that of a random burglar but a situation during which magazine after magazine has to be fired for a sustained period of time.

➤ *Far right, top:* The barrel on the IC-A5 is hammer forged and spiral fluted to increase surface area for quicker cooling. The piston system is accessible via the scallop in the front of the rail and can be set for regular or suppressed fire.

➤ *Near right:* LWRCI includes three sections of rail in the IC-A5 package. One is a short rail with a QD socket; the other two are longer sections. Here, one is installed with the attached foregrip, and the other is on the 3 o'clock side.

➤ *Far right, bottom:* Almost a mirror image of the left side, the right side of the IC-A5 includes ambidextrous controls for the bolt release, magazine release and safety selector.



I had, and still have, no reservations about the reliability of the LWRCI IC-A5 after working with it for a month. When it comes to overall execution, the thought put into the design and production of every single component is obvious, as is the attention to detail. It all comes together brilliantly in an extremely solid package.

"THE LWRCI IC-A5 NOT ONLY EMBODIES THE CLASSIC LOOK, FEEL AND MODULARITY OF THE TYPICAL AR-15 RIFLE, IT RAISES THE BAR SIGNIFICANTLY IN REGARD TO MAKING A GREAT RIFLE THAT MUCH BETTER."



◀ Far left, top: This bird's-eye view of the gas block shows the two screws up front that lock the top portion of the IC-A5's rail into place.



◀ Left: The stock is LWRC's iteration of a standard AR-style stock with an available, quick-detach point socket.



◀ Far left, bottom: Neatly finished and comfortable to hold, the rail (like the receiver) is finished in a flat dark earth Cerakote and has rail attachment points for the addition of accessories.

“... THE THOUGHT PUT INTO THE DESIGN AND PRODUCTION OF EVERY SINGLE COMPONENT IS OBVIOUS, AS IS THE ATTENTION TO DETAIL.”

NUTS AND BOLTS

The first thing an experienced AR user will notice about the IC-A5 is that this rifle is fully ambidextrous. Controls, including the bolt catch, slide release and magazine



◀ The fit and finish on the IC-A5 are superb and incorporate high-quality components that are built to last.

SPECIFICATIONS

Velocity Ratings

(10 feet from muzzle; five-shot average)

- BLACK HILLS 77-GRAIN MATCHKING SIERRA HP: 2,646 fps
- HORNADY 75-GRAIN TAP FPD: 2,516 fps
- FEDERAL 62-GRAIN XM855 GREEN-TIP: 2,906 fps
- FEDERAL 62-GRAIN AMERICAN EAGLE FMJ: 2,889 fps



release, are located on both sides of the weapon, and the weapon includes an LWRCI ambidextrous charging handle at the top-rear position of the weapon.

The upper is a Monoforge assembly that includes a Picatinny top rail and an integrated rail base, which make it a bit stronger than typical off-the-shelf AR rifles. A 12-inch, configurable rail shrouds the barrel to provide extra room for optics and will accept short rail sections at the 3, 9 and 6 o'clock positions for the addition of other accessories such as foregrips, lights, lasers and so forth.

A vital element of any rifle, the heavy barrel is hammer-forged 41V45 steel that is Ni-Corr treated and is spiral fluted, which adds 10 percent more surface area for cooling. The barrel is 16.1 inches long and sports a 1:7 twist, which will stabilize heavier bullets much more quickly. Additionally, the muzzle has a thread pattern of $\frac{1}{2} \times 28$ for those who wish to run the IC-A5 suppressed.

Speaking of running suppressed: The gas block is accessible via a deep scallop into the front of the rail. The piston mechanism is a two-position affair that can be adjusted from normal fire to suppressed fire. And, on the top rail, LWRCI includes a set of its highly functional Skirmish sights.

Back at the receiver is a Magpul MOE grip, along with LWRCI's ambidextrous sling mount with integrated quick-detach points. The beating heart of the receiver is LWRCI's Enhanced Fire Control Group, which is nickel-boron coated for lubricity and smoother operation.

Bringing up the rear is LWRCI's adjustable stock with an integrated quick-detach point, as well.

**"WHEN IT COMES
TO OVERALL
EXECUTION ... IT ALL
COMES TOGETHER
BRILLIANTLY IN AN
EXTREMELY SOLID
PACKAGE."**

SPECIFICATIONS

Accuracy Results (Best of five five-shot groups from bench at 100 yards)

- **BLACK HILLS 77-GRAIN SIERRA MATCHKING HP:** .72 inch
- **HORNADY 75-GRAIN TAP FPD:** .63 inch
- **FEDERAL 62-GRAIN XM855 GREEN-TIP:** 1.16 inches
- **FEDERAL 62-GRAIN AMERICAN EAGLE FMJ:** 1.33 inches

While the stock is completely serviceable, and the 5.45 x 45mm round offers little recoil, I did find the stock to be aesthetically out of balance with the rest of the rifle. It didn't have the elegant visual appeal found on the rest of the components. But that's just me being picky, and it won't make a difference when it comes time to rock and roll.

PLAY TIME

Reliability was first up on our checklist of attributes to review. A Lucid M7 red-dot sight was mounted and sighted-in for this phase of the test. A good supply of Federal Premium's 62-grain American Eagle rounds was on hand to do the initial break-in of the IC-A5. Offhand shooting was done at 25, 50 and 100 yards using the M7 optic, and nearly 200 rounds were expended with no malfunctions whatsoever.

This reliability testing also included rapid firing of multiple magazines at our silhouette target. Despite the speed and volume of rounds fired, the IC-A5 didn't hiccup once. This was true with Federal's XM855 62-grain Green-Tip rounds, as well. Approximately 150 rounds of it were fired with no issues.

The forend did get quite toasty after a while, especially after rapid-fire strings. Therefore, anyone planning to hold down the fort single handedly should invest in a foregrip or a set of Rail Skins from LWCR that will lock onto Pictatinny rails and stay in place.

For a lot of AR shooters, ammunition such as the American Eagle rounds or the XM855 loads is going to be the general purpose stuff that gets used the most, whether it's for practice, recreation or for intense crowd control when the SHTF. It's important to test each type of round that's to be stored up in bulk to make sure it functions properly with the weapons with which it will be used.

For the accuracy portion of the test, the IC-A5 was fitted with a Lucid 4-16x44mm scope, and some specialty ammunition from Hornady and Black Hills Ammunition was rounded up, as well. The Black Hills offering was its 77-grain Sierra MatchKing hollow-point round. Close to 100 rounds of it were fired during both offhand and bench shooting, and its inherent accuracy was excellent. The best group at 100 yards from the bench was .72 inch.

The product received from Hornady was its 75-grain TAP FPD load, which I had not used before this review. This ammunition is designed for tactical work and has a very strong following in the law enforcement community.

The 75-grain TAP rounds mated with the LWRCI barrel beautifully and turned in consistent sub-MOA groups, with the best group at 100 yards coming in at just .63 inch—with three shots making one hole.

To my mind, this is pretty exceptional accuracy—for a couple of reasons. First, the trigger pull on the IC-A5 averaged 5.8 pounds for this T&E sample. That's completely usable for actual field use, but it's not exactly a match trigger. Second, I am not an expert rifleman with



◀ Far left, top: The first stage of testing was done with Federal Premium's 62-grain American Eagle loads and a Lucid M7 red-dot optic. The American Eagle rounds proved to be both very accurate and extremely reliable with the IC-A5.

◀ Left: The IC-A5 was very accurate with a number of loads, demonstrated by the .72-inch group achieved with the 77-grain Sierra MatchKing hollow-points from Black Hills Ammunition.

◀ Far left, bottom: The 75-grain Hornady Tap FPD rounds also performed well, coming in with just a .63-inch spread for this five-shot group.



► The IC-A5 was fun to shoot and very accurate. The Lucid M7 red-dot optic made target acquisition easy for close-quarters firing.

An illustration of three Cerberus dogs, each with three heads and sharp, bared teeth. They are depicted in a dynamic, aggressive pose, appearing to leap or attack. To the right of the Cerberus dogs, a large, black, serrated-blade knife is shown standing upright. The handle of the knife is red. The background is a textured, light beige color.

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20 years of experience behind me. I work more with handguns and carbines. So, someone with more range time and patience could probably best my results easily.

There's no question that the IC-A5 has the goods, and there's plenty of accuracy left to wring out of the barrel. And even with the additional types and weights of ammunition thrown at the IC-A5, it just couldn't be made to jam. All told, about 500 rounds were fired through it without so much as a stutter.

THE LAST AR?

Who knows what the outcome of this year's election will be? As with other things in life, we might be intently watching one situation while 10 others develop out of nowhere. In other words: The best time for a person to acquire a rifle with which they can trust their life is now. Don't wait around and try to predict events and their outcomes. Anything can happen at any time. Be ready for it.

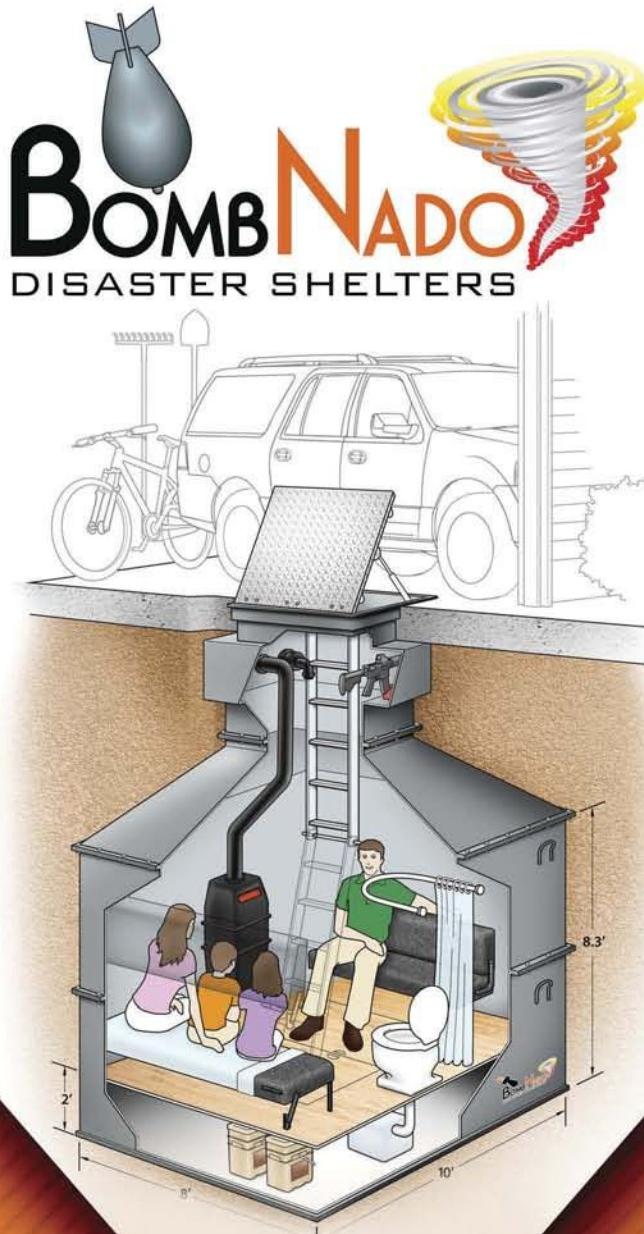
The IC-A5 rifle from LWRCI is an evolutionary refinement of a proven platform. It takes the features we love in a typical AR and complements them with a gas-piston system that keeps the weapon cleaner and more reliable during extended use. That's exactly the type of weapon needed for real-world defensive scenarios, rather than for popping cans out in the woods.

With an MSRP of \$2,804, the IC-A5 isn't cheap, but the better things in life never are. After what I experienced during the testing-and-review process, and after digging into LWRCI's manufacturing process, I wouldn't hesitate to select the IC-A5 as the rifle of choice to make my stand.

In fact, I'm not hesitating at all. I'm sold on its performance and reliability. Waiting until the day after the world goes sideways just isn't an option. **ASG**



◀ Extended rapid shooting was part of the test to check for reliability and controllability. Despite the spiral fluting, the receiver still got pretty warm. If taking on a hoard of motorcycle marauders, a pair of gloves would be in order.



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THE WORLD WANTS **YOU DEAD**

**DANGER IS WAITING RIGHT OUTSIDE
YOUR FRONT DOOR.**

BY JAMES FOWLER

In elementary school, you are taught that human beings are at the top of the food chain; that because of our opposable thumbs, forward-facing eyes and enlarged brainpans, we command allegiance over the fish in the seas, the fowl of the air and the beasts of the lands.

This is true ... as long as you don't leave the breakfast table.

As soon as you step off the sidewalk and into the woods, pastures, deserts and beaches, you enter a world in which the concept of "human superiority" no longer applies. When you go into the wilderness, even for a couple of hours, you are surrounded by things with fur, feathers and fangs that are always looking for their next meal. If they're desperate enough, that meal is *you*.

TRUE KILLERS

Besides single-celled viruses and bacteria that claim millions of deaths each year and man, himself, the deadliest creature on the planet is the lowly mosquito. It is the "Bloody Mary" of the insect world, transmitting the malaria parasite and causing the death of nearly 3 million people around the world annually.

However, in America, contracting malaria, as well as other mosquito-borne illnesses—now including Zika—is very rare. This is thanks, in part, to modern medicine, vaccines, quality health and safety codes regarding stagnant water, and education. (The odds of you being attacked by a shark or a bear pale in comparison to the those of being stung by a malaria-infected mosquito in a Borneo swamp and dying because you lack access to modern medicine. When in tropical climates, fear not only the mosquito but also the lack of healthcare; that's what will really kill you.)

In the United States, the insect that has the biggest body count is the humble honeybee, which kills more than 50 people each year, due mostly to an allergic reaction to bee venom. Black widow spiders come



◀ Above: Wolves barely make the chart for causes of human deaths—but be wary of the threat when you enter areas where wolves are active.

"WHEN YOU GO INTO THE WILDERNESS ... YOU ARE SURROUNDED BY THINGS WITH FUR, FEATHERS AND FANGS THAT ARE ALWAYS LOOKING FOR THEIR NEXT MEAL. IF THEY'RE DESPERATE ENOUGH, THAT MEAL IS YOU."

in at second place, with a kill score of a half-dozen people. Add to the list rattlesnakes, scorpions and centipedes, and you only have about 75 deaths a year in the United States. So, the real fear is an animal attack that results in injury, not death.

ATTACK!

According to the U.S. Department of Fish and Game, there are only three animals in the United States that enjoy hunting humans in the wild: sharks, alligators and mountain lions. Although shark attacks are very rare, mountain lion attacks are even more rare, and alligator attacks happen mostly on golf courses, it is still unnerving—not just because they kill humans, but because the idea of being stalked, killed and eaten is horrific. However, the danger when going into the wilderness is not being killed by an animal such as a bear or a wolf (because it is exceedingly rare) but simply being attacked by one.

All animals can attack. When cornered, threatened or when they feel their offspring could be harmed in any way, animals will lash out with a fierce abandon that might surprise some people, especially from animals we believe to be docile.

Two cases in point: Donald Dube, a 55-year-old New Brunswick, Canada, man, was trampled and mauled to death by a 200-pound whitetail deer near his house in 2011. The deer was in rut and felt challenged by the presence of another "animal." Australian Mary Anne Forster was attacked and severely bitten by a koala when she ventured too close to it in 2014. Her injuries required 12 stitches.

ANIMALS CLOSE TO HOME

As populations spread and big cities melt out into the surrounding real estate, houses, schools and civilization steadily encroach onto land that was once untouched nature. The closer you live to the edge of town, the higher the likelihood of being attacked by a



GETTY IMAGES.COM/SYDNEY JOHNSTON

wild animal on your own front lawn. For example, more than 8,000 people are bitten by venomous snakes each year in the United States (with an average of six people killed).

It is no secret that animals will track down the easiest food source; that means polar bears rummaging through dumpsters, moose grazing in the front yard and bears sniffing around the dog's food bowl on the patio.

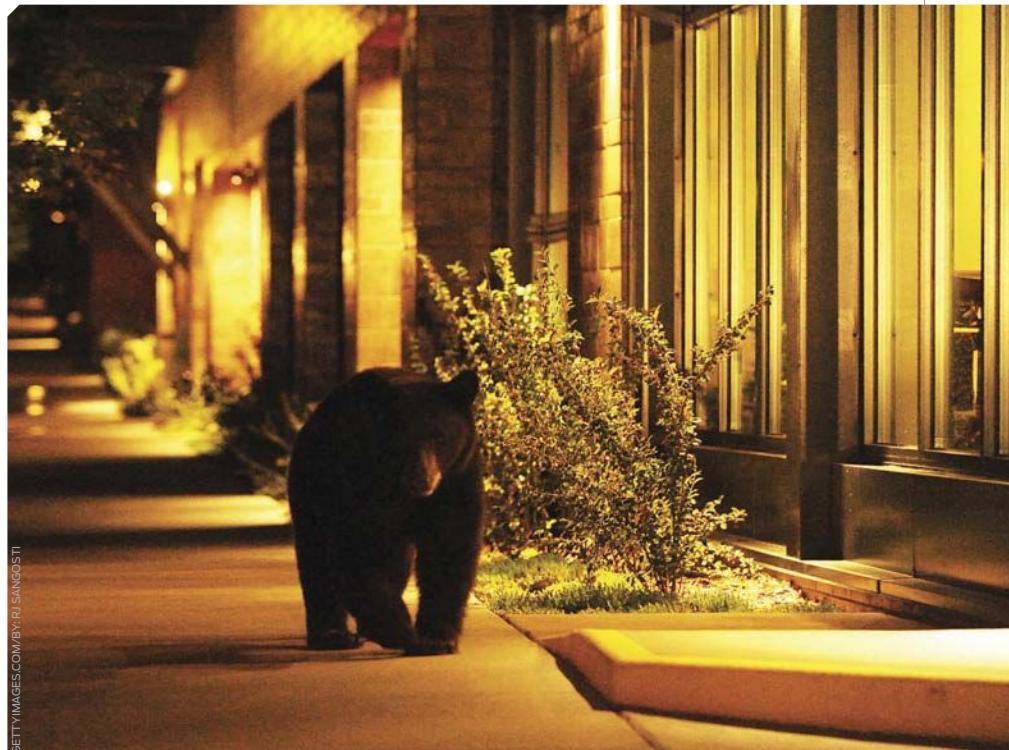
The hot months of summer or the dry months of early autumn bring animals down from the local mountains in search of water. This is when animal attacks happen most often. However, these attacks are more likely to happen to small pets and other animals in your neighborhood rather than people. A house cat or a small dog is a much easier target for a wolf or coyote than a human being, so they generally avoid people.

Nevertheless, this doesn't mean you shouldn't be cautious.

AVOID CONFRONTATION

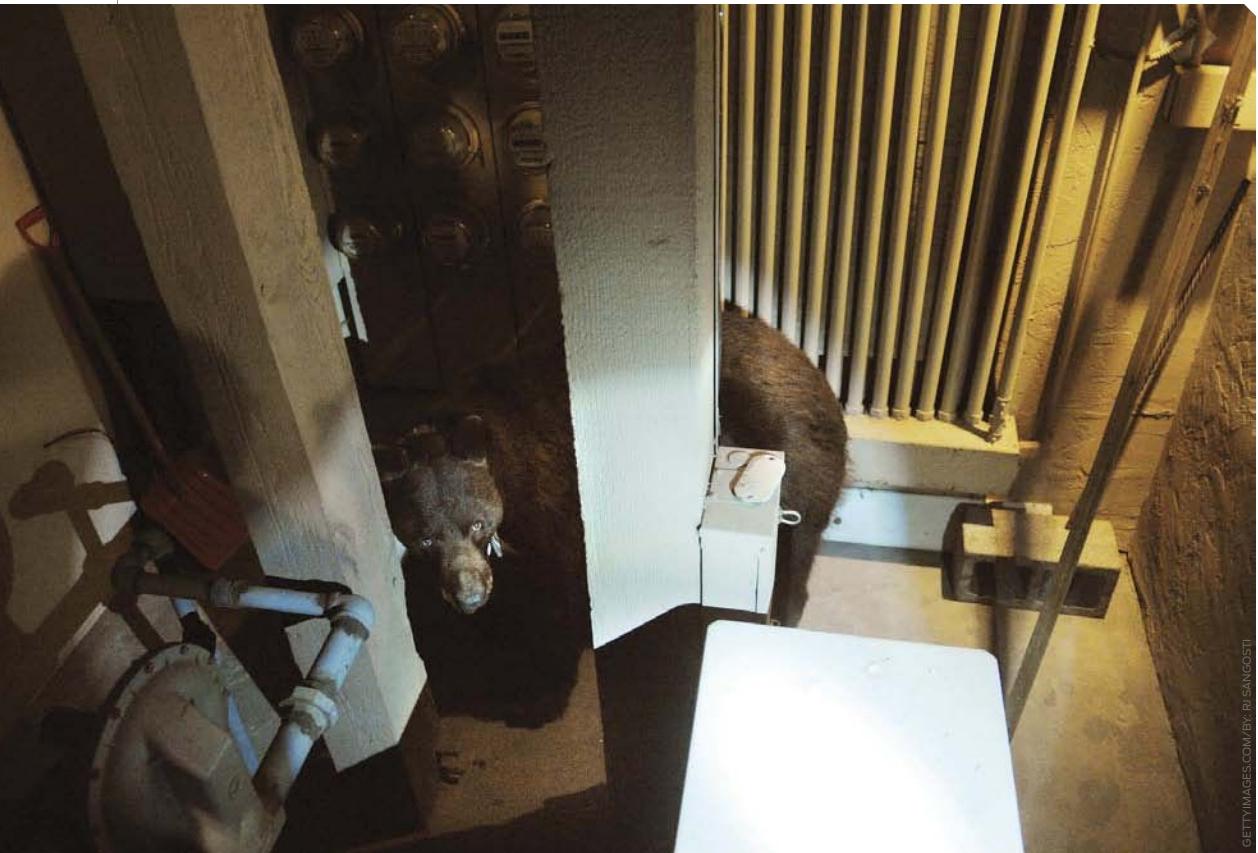
You're only on top of the food chain because of your ability to make tools. Animals' claws and teeth are no match for knives, guns, and bows and arrows, mostly because these weapons keep us at a safe distance. But if we take them away and drop you in the middle of the forest or the Everglades, you'll quickly discover that bare hands and bared teeth are no match for a mountain lion or the ripping teeth of an alligator.

"THE CLOSER YOU LIVE TO THE EDGE OF TOWN, THE HIGHER THE LIKELIHOOD OF BEING ATTACKED BY A WILD ANIMAL ON YOUR OWN FRONT LAWN."



▲ Above: A black bear roams the streets of downtown Aspen, Colorado, in a hunt for food.

◀ Left: A coyote raids a trash can left outside a house in the Rocky Mountains.



» Above: A black bear hides under the stairs at an office building in downtown Aspen. Black bears are quite common in Aspen, because they often find food in residents' trash. The bears keep local police busy: There are dozens of calls each night.

The best method of avoiding an attack is to keep your eyes and ears open when you are out in the wilderness. You're hiking through these animals' homes and hunting grounds, and any rational animal will fight to defend its territory when sufficiently provoked.

Leave the animals alone when you see them. They're not pets. So, don't put a baby bison in your car (this actually happened in Yellowstone in May 2016) or put a harbor seal in a beach bag (California, June 2016).

Maintain a safe distance when you do see one, and don't try to get closer to get a better picture. The story of you seeing a



» Below: An adult coyote sporting its winter coat in the Sonoran Desert near Tucson, Arizona



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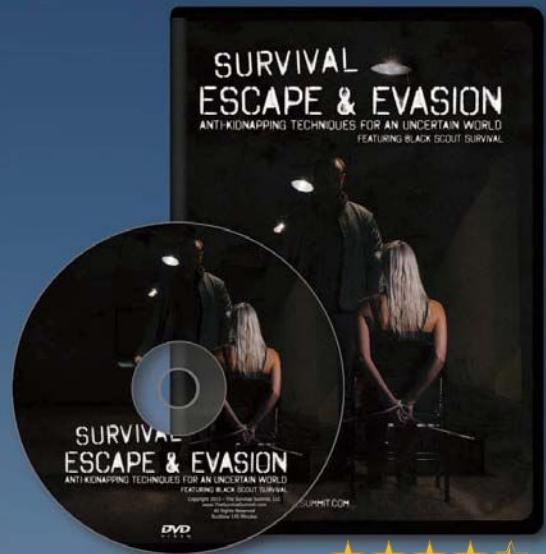
» Above: Trash is tossed along the sidewalk near a grocery store in Aspen after a black bear opened up the can while hunting for food.

» Left: The Eastern diamondback rattlesnake is the largest venomous snake in North America, sometimes reaching up to 8 feet long.

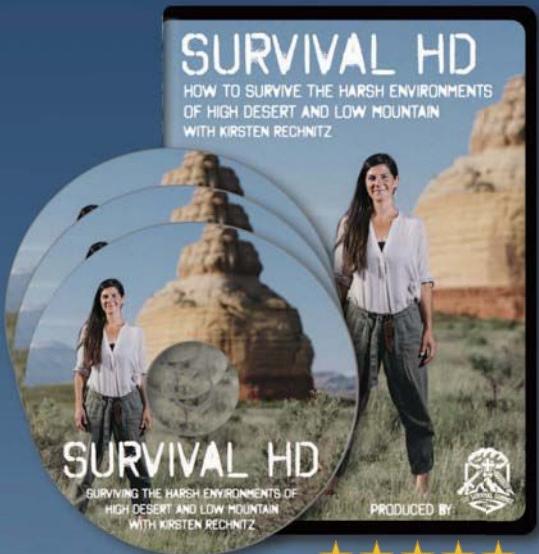
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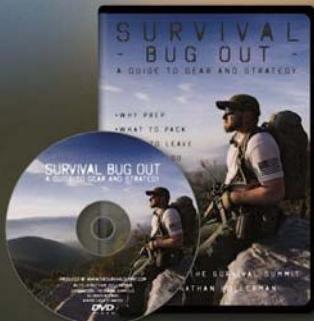
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bear is better than the story of the bear putting you in the hospital because you wanted a selfie with it.

ALLIGATORS

The Florida Fish and Wildlife Commission notes that even though the state averages about seven unprovoked alligator attacks per year—a rate that has been increasing about 3 percent a year—the likelihood of being seriously injured in a random attack is roughly one in 2.4 million.

It is recommended to have a survival plan before going near locations in which alligators are known to congregate. When an alligator attack does seem imminent and you're on land—run. Because of this, along with the fact that an alligator has very little endurance, it won't chase you for very long. There's easier prey in the water.

◀ Above and below:
Alligator attacks are
fairly rare—but on
the rise—and can
be fatal.

If you're in the water and an alligator clamps onto your leg, struggle the best you can. Don't try to pry open its jaws; that is impossible. As quickly as possible, start to gouge at its eyes with your thumbs—these are the only sensitive areas on its head. In addition, when it comes to large prey, alligators can't chew and swallow at the same time, so it must let go in order to rip off smaller-sized pieces.

Do everything possible to prevent it from taking you under the water and into one of its infamous death rolls, where it flips its prey over and over until it bleeds to death or drowns. As a last-ditch effort—although it is a risky maneuver—play dead. Alligators will release their jaws on something they think is dead in order to either better position it to swallow it or to begin to rip chunks from it. This is your last chance to escape.

In reality, adult humans are too much trouble for alligators to have a desire to pursue them, but this isn't true for children, which was proved in the recent attack at Disney World in May of this year. If you have small children or pets with you, keep them away from the water's edge.

If you are fishing, don't clean the fish in the boat or discard the entrails near the shore or directly from the boat. Most attacks happen when people get too close, when they are trying to capture



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BY THE NUMBERS

Average Annual Number of Animal-Related Deaths in the United States

Bee/wasp	53
Dog	31
Horse	20
Spider	6.5
Rattlesnake	5.5
Bull	3
Mountain lion	1
Shark	1
Bear	0.5
Scorpion	0.5
Centipede	0.5
Alligator	0.3
Elephant	0.25
Wolf	0.1

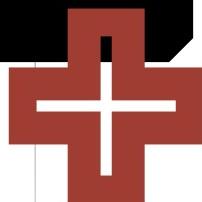
Source: Department of the Interior

Top 15 States for Animal-Caused Deaths

Texas	356
California	212
Florida	171
North Carolina	122
Tennessee	120
Ohio	112
Pennsylvania	108
Georgia	107
New York	88
Michigan	88
Wisconsin	87
Missouri	86
Illinois	84
Arizona	77
Oklahoma	70

Source: Centers for Disease Control and Prevention

alligators or move them off their property.

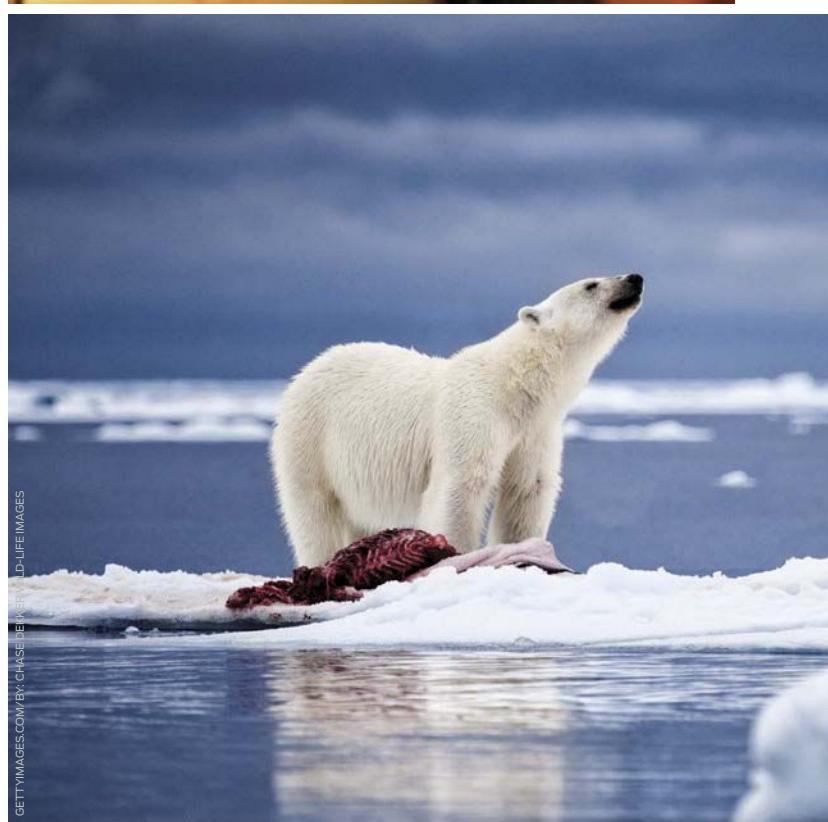


BEARS

In all situations when bears are nearby, make sure food is properly packaged and not in a position that would draw attention. If you're camping, you also don't want food near your tent. Stay on the constant lookout for bears, and always be mindful of where they are headed to make sure you don't cross their path.

If you find yourself confronted by a bear,

Right and above:
The apex predators
in their environments,
bears can outrun,
out-sniff,
and outfight
humans, so use
your brain to stay
out of trouble.



regardless of the environment, what you should do often depends on the type of bear you've come across.

Black bears: "Black bears are not aggressive bears," says Jerry Apker, carnivore biologist at Colorado Parks and Wildlife. "It's very rare for them to behave aggressively, and when they do, it's possibly about food and sometimes, about their young."

Be aware of your surroundings if you're in bear territory. If you see a black bear, make sure it knows you're there before it gets close. You don't want to surprise it.

If a black bear charges you, stand your ground. Chances are, it's going to be a bluff charge, and the bear will either veer away at the last moment or will stop anywhere between 15 to 20 feet away and huff at you.

If a black bear attacks (which is rare, because there have only been two fatalities a year from a population of nearly 1 million black bears in the United States), the best means of survival is to fight with whatever tools you have at your disposal. Always carry bear spray when you are in bear country.

Grizzly bears: Grizzlies tend to feed at night and sleep during the day, and most grizzly attacks are caused by humans who are too close to mothers with cubs. If you are in an area where bears might be, you should constantly be on the lookout for them. Stay away from carcasses a bear

"... THE REAL FEAR IS AN ANIMAL ATTACK THAT RESULTS IN INJURY, NOT DEATH."

could be protecting as food.

The worst thing you can do is surprise a bear. (A case in point: Brad Treat and a friend were mountain biking near West Glacier, Montana, in June 2016, and they surprised a grizzly bear. The bear attacked Treat on his bike and killed him.) There have been six fatal grizzly bear attacks since 2010 in the Yellowstone region.

If you see a grizzly, freeze in your tracks. Don't move. Whatever you do, don't run; grizzly bears can run 40 mph for 2 or 3 miles ... and you can't. Speak in a calm, low voice to hopefully give an indication to the bear that you are not a threat.

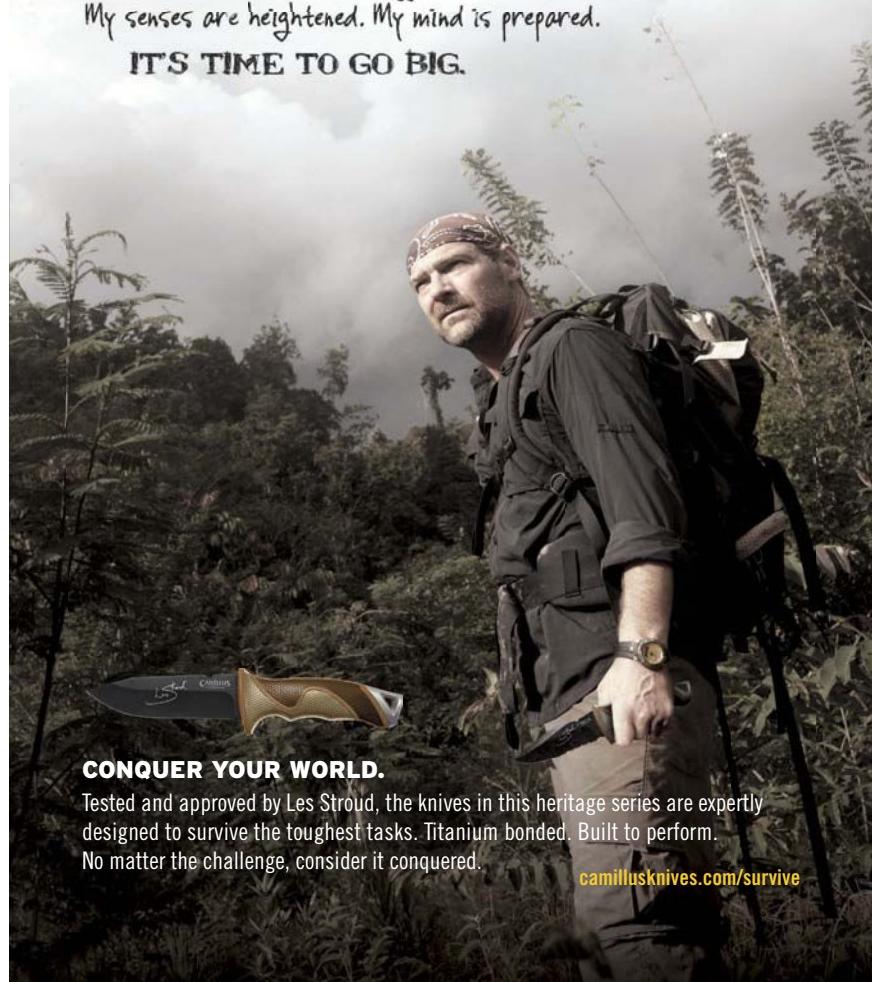
If an attack is imminent, don't fight back. Roll into a tight ball, and protect your neck and face with your

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hands. Odds are good that the grizzly will swat you a couple of times before losing interest. After that happens, remain quiet and in the ball until you are sure the bear has left the area. It might be watching you from a distance, so be careful when moving.

Polar bears: Polar bears are true predators and should always be given a wide berth. They are curious animals that routinely investigate their environment, especially if there is a chance for a meal. A campsite is attractive to a polar bear. After all, it has bright-colored tents, pleasant odors and unusual sounds.

It's best to not be seen by a polar bear, so avoid them altogether. If you see one and it stops to sniff the air, swat or lower its head below its shoulders with its ears pressed back, it might be aware of your presence. If the bear feels threatened, it will likely huff or snap its jaws together. It might also make eye contact with the threat.

If a polar bear approaches you, do not run; it, like a grizzly, is much faster than you are. Instead, slowly move toward a safe shelter, such as a vehicle or building. If none is available, stand your ground. Gather people together in a group and/or hold a jacket over your head to look bigger. If the bear continues to approach, shout or make lots of noise.

If it attacks—and one to three polar bears do this every year—your only chance of survival is to fight back by any means possible. You want to make yourself such a nuisance that the bear will lose interest.

To avoid or survive an attack, never go into bear country without a deterrent—either bear spray or firearms.

BE AFRAID, VERY AFRAID

Dr. Joseph Forrester, a surgeon at Stanford University, co-authored a 2012 review of fatalities nationwide from venomous and nonvenomous animals based on data from the Centers for Disease Control and Prevention (CDC).

"People have in their mind that the most dangerous animals are cougars, bears or alligators, but a bee is more dangerous if a person is predisposed to a reaction," he pointed out.

"The most common animal-related fatalities are from large mammals, like cattle or horses, but when you're looking at attacks from wild animals only, the most common causes of death are due to venomous animals, like wasps or bees."

For instance, from 1999 to 2014, 921



➤ *Above, left:* Honey bee stings are a painful irritation for most but can be life-threatening to those with allergies.

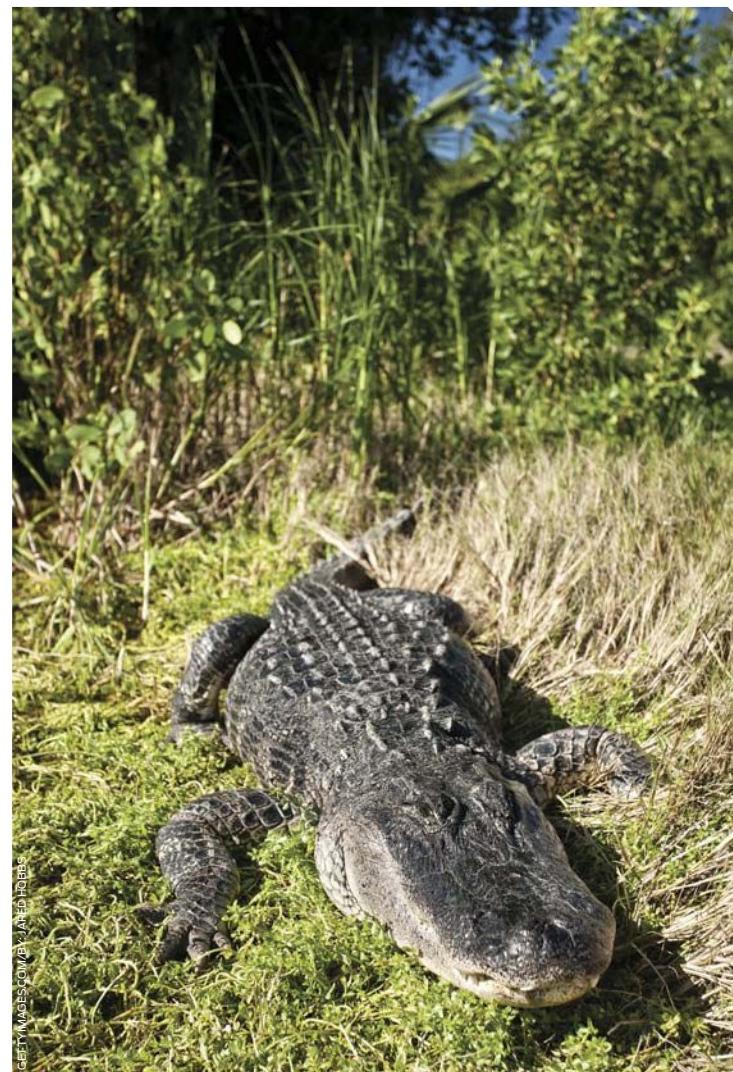
➤ *Above, right:* Honey bees are the insect world's number-one killer of humans in the United States.

people died in the United States from encountering hornets, wasps or bees, according to the CDC. During that same time span, nine people died from alligator attacks, and 78 people died from attacks by other reptiles.

During that same time, 486 people died from dog attacks from the 16 million reported bites, and 1,163 people died from attacks by other mammals, such as cows or horses. In four states alone—Iowa, Kansas, Missouri and Nebraska—between 2003 and 2008, the CDC reported 108 deaths resulting from cow attacks, mostly because of blunt trauma to the chest.

You're more likely to be killed by your own pet (31 deaths a year), by hitting a deer with your car (130) or by a horse (20) than you would a bear (1) or an alligator (1).

But, you don't want to be that *one* this year, do you? **ASG**



➤ *Right:* A healthy dose of caution and situational awareness in potential alligator habitats go a long way to prevent attacks.

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LAST WORDS

WHAT'S OVER THE HORIZON?

As 2016 moves steadily to our six, now is a good time to take a look at the things we've accomplished, examine how reality measured up against our expectations and adjust our plans for the future.

How did you make use of this year?

Some of us improved our shooting and self-defense skills by taking classes or dedicating more time to practice. Others added to their stores to extend or enhance the way they will endure a natural or man-made disaster.

As the concerns about domestic terrorism, social unrest and political dissonance increased, many more people took the first steps toward investigating the options available to prepare for situations that will shove them outside their current safe and comfortable lifestyle. And most people ignored everything going

on around them and assumed someone else will be there to pick up the pieces of their lives. Good luck with that.

Through August, federal firearms background checks were more than 29 percent above the same period last year. If that doesn't indicate that people are concerned about their safety, I don't know what would.

What will 2017 bring?

As we look forward, the horizon is a bit fuzzier than normal. Once our new president is in office, we might have a better idea of what the next four years could bring. Chances are slim that we will feel much better than we do now, but we will continue to make the best of the situation.

Remember to keep your head, stay organized, and validate and follow your plan. Above all, keep moving forward.

As Benjamin Franklin once said, "You may delay, but time will not." **ASG**





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